Harveian Lectures
ON
SYPHILITIC DISEASES OF THE EYE AND ITS APPENDAGES.

Delivered before the Harveian Society on Dec. 2nd, 9th, and 16th, 1897,

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LECTURE II.—*Concluded.*[1]

Delivered on Dec. 9th, 1897.

THE CHOROID.

SYPHILITIC diseases of the choroid are both numerous and varied, also somewhat difficult of classification. Putting aside syphilomata the inflammatory changes may be grouped into four separate classes: (1) disseminated choroiditis; (2) diffuse choroiditis (always associated with retinitis); (3) macular choroiditis; and (4) peripheral choroiditis. Any one of these varieties may be combined with another; in fact, it is not at all uncommon to see a transition step between the disseminated and the diffuse. So frequently is this the case that one is apt to consider the latter merely a later or a progressive condition of the former. In dealing with inflammatory changes in the choroid it will be well to bear in mind that the retina is always involved even if the lesions be focal—i.e., disseminated. If one of the patches in disseminated choroiditis happens to be present at the macula lutea there will exist a central scotoma. It is a fact of great interest that if the macula is, as it were, punched out the visual acuity of that eye is reduced to $\frac{5}{60}$ Sn. and Jaeger 16. So true is it that I am at once placed on my guard and suspect a central scotoma if the vision is reduced to that degree. In this form of choroiditis provided the macula lutea remains unharmed it is possible to map out the various scotomata in the visual field with considerable accuracy. All forms of syphilitic choroiditis are late secondary manifestations of syphilis. They belong to that group of symptoms which constitutes the intermediary stage, the period of relapses or reminders. It is true that they are often seen in the tertiary stage of syphilis and still progressing. Moreover, cases of choroiditis may follow irido-cyclitis three, four, or more years after the initial sore. The activity of the inflammation varies to some extent and, speaking generally, the earlier the choroiditis develops the more active the inflammatory reaction.

Disseminated or focal choroiditis is usually an active inflammation and occurs as early as any of the above varieties. The individual lesions are seldom seen during the period of exudation owing to the associated hyalitis. The vitreous body is turbid from inflammatory products; so densely crowded with opacities is it in some instances that only a red reflex can be obtained with the ophthalmoscope. The details are lost in a fog. In most cases, however, the coarser details can be seen through the mist and sometimes the yellow nodules or focal lesions are visible. They are dull yellow, like small patches of chamois leather, scattered about the fundus oculi. By examining the front of the vitreous with the ophthalmoscope myriads of dots can be seen floating about. Their very presence is strong presumptive evidence of syphilis. Under a judicious course of mercury and iodide of potassium the turbid media will in time be restored to their natural transparency and the cicatrising lesions become apparent. We see scattered about small white areas of exposed sclera, 1 mm. or less in diameter, surrounded by a ring of black pigment. Though frequently discrete in some places they may coalesce and produce a large atrophic area with an irregular pigmented margin. Masses of pigment are often seen on these areas and in places where complete destruction of the choroid has not taken place choroidal vessels are visible. To comprehend the nature of these lesions in the choroid it is necessary to fully understand its anatomy. If we bear in mind that the choroid is a most vascular membrane consisting of a close meshwork of large capillaries, also a second meshwork of freely anastomosing venous channels with a few comparatively small arteries supplying them, we are able to appreciate that the blood circulating within it is slow and very uniformly distributed, points of immense value when we remember that (*a*) the rods and cones are nourished by this membrane, and that (*b*) the pigment in the retinal epithelium is dependent upon it for its sustenance. If at every beat of the heart a pulse wave were transmitted through the choroidal capillaries we should be perpetually worried by flashes of light in the dark consequent on the intermittent irritation of the retinal cones. Another point which deserves special consideration is the intraocular pigment. There is a uniformly distributed layer of pigment in the epithelium between the retina and the choroid. Developmentally it belongs to the former. In the capillary layer of the choroid immediately subjacent to the lamina vitrea there is no pigment, but in the meshes of the larger and more deeply situated venous plexus there are pigmented connective tissue corpuscles. If the pigment is deficient or absent in these cells as well as that in the epithelium it is possible to see the pink choroidal vessels on a light background. This is seen in its most pronounced form in albinos; it is often seen in fair individuals. Conversely if there is excess of pigment in the meshwork of choroidal vessels without a corresponding density of pigmentation in the retinal epithelium we see orange-red choroidal vessels on a dark or dusky background, a condition from its resemblance to a tiger's skin termed *choroïde tigrée*. These are physiological variations and must not be mistaken for pathological changes. We shall find shortly that the choroidal vessels are rendered visible by disease but always in combination with other changes which are known to be pathological. I have wandered somewhat from the main subject for a purpose as I wish to describe a pathological unit and explain how it is brought about. The disseminated patches of choroiditis are allied to similar lesions in the skin. Disseminated choroiditis is, so to speak, a rash in the fundus oculi, and each spot, representing a pathological unit, means a focal inflammation set up by an irritant circulating in the blood. We have every reason to believe that it is an organism, vegetable or animal. Every spot on the skin, every mucous patch on mucous membranes, every nodule in the iris, and every choroidal spot stand silent witnesses to the dissemination of the poison. In general tuberculosis we have visible evidence in the choroid of dissemination of the tubercle bacillus. There is in a syphilitic rash active congestion and exudation in the skin and just as the cutaneous rash clears up under treatment or spontaneously so the inflammation subsides in the ocular lesions. We do not usually see the damage done in the skin though some change must take place, however slight; but in the eye it is different. Even the slightest spot in the choroid causes irritative hyperplasia of the pigmented epithelium and a pigmented patch is left. If the inflammatory focus is more active it becomes destructive and atrophy of the retinal epithelium and choroid occurs in the centre with proliferation of epithelium around. It is allied to the effects produced by a corn, *central destruction, peripheral construction.* It is easy to see similar processes in the skin; we have hyperplasia of cells in syphilitic psoriasis. It is the friction which removes them after the subsidence of inflammation. There is no intraocular friction. Also we have as evidence of atrophy a scar left in the skin after a rupial sore. We can extend this analogy still further. As a rule the patches left after disseminated choroiditis remain quiescent and permanent but discrete. Sometimes the active inflammation does not quite subside, the embers smoulder on, and a chronic serpiginous choroiditis is the result. Focal lesions coalesce and fresh foci appear until a very extensive and peculiarly mapped-out appearance of the fundus is seen. Wherever the pigmented epithelium is destroyed it may be taken for granted that the rods and cones are also destroyed or rendered functionless. Here, then, is a serpiginous choroiditis just as we sometimes see serpiginous ulceration of the skin as a late secondary or a tertiary manifestation of syphilis. The following is a typical case of disseminated choroiditis in acquired syphilis.

CASE 6.—The patient, a young married woman, consulted me owing to failure of vision in both eyes. The condition of her eyes when she

[1] Lecture I. and part of Lecture II. were published in THE LANCET of Dec. 11th and Dec. 18th, 1897.

came to me was as follows: R.E = $\frac{6}{6}$ Sn., Jaeger 4; there were several posterior synechiæ, vitreous opacities, and *disseminated choroiditis*. L.E. = $\frac{6}{6}$ Sn., Jaeger 4; there were vitreous opacities and *disseminated choroiditis*.

Under mercurial treatment and the use of atropine drops her vision improved in two months to—R.V. = $\frac{6}{6}$ Sn., L.V. = $\frac{6}{24}$ Sn. The present state of her right eye is shown in the drawing of her right fundus oculi. The left is much the same in appearance. It shows that the disseminated choroiditis did not remain stationary, that the retina became involved, and now we can only class it as a variety of choroido-retinitis. I believe that if she had continued with the treatment for a longer period the disease would have been arrested.

If the visual fields were mapped out in these cases it would be found that scotomata corresponded to the lesions in the fundus oculi. In the active stage, besides a failure of vision—"a mist before the eyes" as it is usually described—there are symptoms of irritation of the percipient elements of the retina, intermittent flashes of light in the dark—photopsia. This is more often noticed in the more extensive forms of choroiditis than in the disseminated. The following is an example.

CASE 7.—A middle-aged married woman consulted me simply because she saw flashes of light in the dark. She noticed it to a less extent during the day-time. Her vision was very defective (R. V. = $\frac{6}{60}$ Sn., L V. = $\frac{6}{60}$ Sn.). With each eye she saw the flashes. There was a distinct history of syphilis. The right fundus showed general thinning of the choroid, or, in other words, the large choroidal vessels were clearly seen. Some white glistening patches, some pigmentary changes, and a few yellow spots were scattered about the fundus. The left eye showed similar changes to a less degree, but no glistening patches and but slight pigmentary changes. Her sight began to fail five years previously.

In this case the photopsia was in all probability caused by the yellow spots, which were no doubt active inflammatory foci. One of the most interesting, and certainly one of the most remarkable, cases that has come under my care was the following. It may be taken as an example of macular choroiditis.

CASE 8.—A married woman who had never been pregnant came under my care at St. Mary's Hospital, when her condition was as follows: R.V = $\frac{6}{6}$ Sn., L V. = $\frac{6}{6}$ Sn. Vision had been lost in the right eye during the last nine days; in the left eye it failed two or three weeks ago. She complained very much of constant flashes of light in front of her eyes. Her pupils contracted to light. There was no synechia. There was slight vitreous haze in both eyes, more so in the right. In the right macula lutea was a circular yellow spot of exudation. In the left macula were three or four smaller spots conglomerated together. A central scotoma existed in each eye, otherwise the visual fields were perfect. Under mercury and iodide of potassium her vision improved rapidly.

With respect to the syphilitic history I cannot do better than quote the facts sent by the medical attendant:—

"1. On Oct. 5th, 1893, her husband came to me with a primary chancre. 2. In 1894, Oct. 1st, I find an entry of mercurial treatment for the wife and I am *positive* that she has never shown any syphilitic symptoms other than the ocular ones, so that I fancy that must show the time when her eye trouble began; any way I sent her off to St. Mary's Hospital at once and the date on her paper will give you the information as to the length of time between the husband's chancre and her eye symptoms. 3. His syphilis ran a perfectly normal secondary course, but his wife never showed any other symptoms than the ocular ones. 4 Treatment appears to have worked wonders. She soon regained her sight. She says she used the 'stuff' she brought from 'orspital' and it did her so much good that she never came to see me again about her eye trouble, though she has been under me for other matters. On July 24th this year—i.e., nearly three years later—her condition was thus: She could see to read small print with each eye. There was no fundus change except a small yellow spot just above the right macula, one above and one below the left macula. The vitreous humour was quite clear."

The absence of any other evidence of syphilis, the small central change in each eye, the severe photopsia with central scotoma, and the rapid and complete cure by mercury and iodide of potassium are the chief features of interest in this case. Yellow spots of exudation may occur in any part of the fundus. They may even be limited to the periphery. The following is a case of peripheral changes due to syphilis.

CASE 9.—A middle-aged woman, who had been married twice, came to me owing to failure of sight. Her eyes had only troubled her the last few weeks and was due to presbyopia rather than her fundus trouble. She had had extensive necrosis in her nose, the bridge had collapsed, and her uvula and adjacent soft palate had been destroyed. Her nose was diseased two years ago and her throat was at the same time ulcerated. She had had a stillborn child fifteen years ago, followed by a miscarriage. She had slight hypermetropia; her R.V. = $\frac{6}{9}$ Sn. corrected, but the L.V. = $\frac{6}{6}$ Sn. only. The media were clear. There was visible one small yellow patch in the inner periphery of her right fundus, several circular yellow patches in the outer extreme periphery of the left fundus, no pigment, and no choroiditic more central.

I believe these patches, though yellow and resembling the active stage of choroiditis, were old-standing. So far examples have been given of central and peripheral choroiditis in the form of yellow spots. It is more usual to see pigmentary changes at the periphery, fine and granular, like a deposit of black pepper. There may be peripheral disseminated patches, involving a small area, or the whole circumference often associated with a slight ring of choroiditis around the disc. Similarly a peppery deposit, or a conglomeration of focal choroiditis, the choroiditis areolaris of Förster, may be at the site of the macula, and the rest of the fundus healthy. Though in some instances we find extensive tracts of choroidal atrophy in the fundus with heaping up or destruction of pigment, this condition must not be confused with a general or diffuse choroiditis. In focal choroiditis the alteration in the retina is scarcely, if at all, perceptible unless the tracts of destruction are extensive, in which case the disc becomes pale and the choroid around it atrophied. In general or diffuse interstitial choroiditis (if I may so call it) there is a corresponding general involvement of the retina and the condition is spoken of as choroido-retinitis. The inflammation destroys the lamina chorio-capillaris and the pigmentary epithelium and is followed by a chronic diffuse interstitial retinitis.

The ophthalmoscopic changes, even in this form, vary within wide limits. The chief features are the extensive destruction, the pigmentation in the retina, the changes in the optic disc and retinal blood-vessels. The whole fundus may be mapped out with large circular or oval pale areas with intervening pigmentation. These areas are usually most obvious in the macular region, the peripheral region presenting the appearance seen in pigmentary degeneration of the retina. It is necessary here to make a few remarks about this peculiar disease as I shall have to refer to it from time to time. It is a disease occurring in both eyes in early life, perhaps congenital, recognised usually about, or just before, puberty. It is accompanied by night-blindness, by extreme contraction of the visual fields, and peculiar changes in the fundus oculi. The ophthalmoscopic appearance is as follows: waxy pallor of the optic disc (in some cases, according to Adams Frost, plum-coloured), marked contraction of the retinal vessels, thinning of the choroid, and a peculiar deposit of pigmentation at the periphery. These deposits very often resemble the appearance of bone corpuscles or of pigmented connective tissue corpuscles; some pigment also usually is found on the walls of the blood-vessel like lichen upon a tree and its branches. It is seldom that the pigment patches are circular, hence circular deposits of pigment are strongly suggestive of a syphilitic taint. There are many cases of syphilitic choroido-retinitis so like primary pigmentary degeneration of the retina that mistakes in diagnosis have been made time after time. The following case is one of the kind:—

CASE 10.—A married woman gave a history of her sight failing ten years ago; it was perfectly good before that date. She had had nine children; all had had snuffles. There had been one miscarriage. There was a distinct history of acquired syphilis. Pigmentary changes were found in both retinæ resembling retinitis pigmentosa. Choroidal vessels were visible, but no white patches of choroidal atrophy. The patient suffered from photopsia at night, but there was no history of night-blindness. In the right visual field there was a complete ring scotoma, but only half a ring scotoma in the left visual field. R.V. = $\frac{6}{9}$ Sn., L.V. = $\frac{6}{9}$ Sn.

Let me quote a typical case of advanced choroido-retinitis for comparison.

CASE 11.—The patient was a young woman whose complaint was gradual loss of sight. "She could see perfectly well four years before, since then her sight had been gradually failing." R.V. = $\frac{6}{60}$ Sn.; fingers could be seen at 2 metres. L.V. ditto. There was a history of severe sore-throat immediately preceding her failure of sight. She had been married seven years, had had no children and no miscarriages. The right fundus oculi showed a pale, waxy-looking disc with distinct margin. The veins were of normal size, and the arteries were very thready. Fine pigmentary changes were scattered all over the fundus, but chiefly at the periphery. At the macular region large circular and ovale pale yellow patches were conglomerated together. A pale background with the choroidal vessels was visible. The media were clear. The left eye presented a similar appearance, but there were fine vitreous opacities. She suffered from night-blindness and her visual fields were much contracted. Her vision improved for a time under anti-syphilitic treatment so that she could see $\frac{6}{12}$ Sn. and read Jaeger 10; this improvement was only temporary. She is now only able to discern light from dark.

This case is one simulating pigmentary degeneration of the retina, but it differs very materially from the last in that the changes in the macular region were almost, if not quite, pathognomonic of syphilitic choroido-retinitis. There was a distinct history of syphilis. In some parts of the fundus could be seen pigment resembling bone corpuscle situated superficial to the blood-vessels. General thinning of

the choroid was present. The disc was of a pale, uniform, salmon tint with clean-cut outline and the arteries were especially constricted. There was night-blindness and very contracted visual fields. All these facts are consistent with the signs and symptoms of "retinitis pigmentosa" (pigmentary degeneration of the retina). But syphilis is rarely a faultless imitator. Signs existed which proved conclusively that the disease was syphilitic—viz., fine vitreous opacities and areas of choroidal atrophy. These are never seen in primary pigmentary degeneration. Evidences of past iritis, though not seen in this case, is another point in favour of syphilis. In diffuse choroido-retinitis of syphilis it is not infrequent to find a ring scotoma and posterior polar cataract. The existence of the latter may occur in either affection, but the former, a ring scotoma, was at one time valued as a point in diagnosis. This has of recent years been refuted by some observers.

Though it has been necessary to dwell somewhat at length on choroiditis and to enter into a description of certain forms of retinitis intimately associated with syphilitic choroidal troubles, especially pigmentary retinitis, I must make a few remarks about syphilitic growths of the choroid before leaving the diseases of the tunica vasculosa. Gumma of the choroid is a rare syphilitic lesion. Syphilis has two sides to its nature. It either tends to the formation of growths or to the diffusion of interstitial inflammations. Other diseases—for example, leprosy—are alike in this respect, they have a double aspect. In one type of individual quite a different expression of the disease is seen to that in another. I can only find notes of one case in which I suspected a gumma of the choroid.

CASE 12.—A young married woman attended my department at St. Mary's Hospital owing to great pain in her left eye and complete loss of sight. She had no perception of light. There were old iridic adhesions, the iris was of a green colour, the anterior chamber was deep, there was slight ciliary injection and raised intra-ocular tension. No details of the fundus were visible owing to the density of the vitreous humour; some very large vitreous opacities were present. She had a gumma of the size of a pigeon's egg on the left ramus on her lower jaw. The right eye was normal. Under mercury and iodide of potassium the gumma on the jaw disappeared and simultaneously the sight returned in her left eye, the vitreous opacities cleared up, and the details of the fundus became visible, but no pathological change could be discovered. The vision was restored to $\frac{6}{}$ Sn. She had been pregnant six times—(1) 1891, miscarriage at third month; (2) 1892, boy born in April, still alive; (3) 1893, girl, only lived ten weeks, "wasted away"; (4) 1895, girl, only lived ten days, "eight months child"; (5) 1895, miscarriage at third month; and (6) 1897, "still carrying, seven months gone."

I think you will agree with me that my diagnosis was justified.

THE RETINA.

Retinitis in association with choroiditis is the most common form of retinal inflammation we meet with in syphilis. It is a very chronic disease and its forerunner, choroiditis, passes almost imperceptibly into one of choroido-retinitis. Another variety of retinitis is the pigmentary form already alluded to, that variety which mimics "retinitis pigmentosa." In both choroido-retinitis and pigmentary retinitis of syphilis the disease is so insidious that the lesion is more an interstitial fibrosis than an active inflammation. We have atrophic changes in the papilla but no preceding papillitis. The essential features in a retinitis are the following: papillitis, varying in intensity but rarely attended with much swelling of the disc; patches of exudation, either fluffy white patches or well-defined small white spots or striæ; cloudiness of the retina, appearing as a faint haze; and hæmorrhages. The changes are practically limited to the posterior pole of the eye, at the macula, and around the optic disc. Jacobson first described a form of syphilitic retinitis accompanied by these signs. It is a comparatively rare disease, and the ophthalmoscopic signs may resemble those of albuminuric retinitis. Syphilis may be the actual cause of albuminuric retinitis by producing an interstitial nephritis; such cases are recorded. Also lardaceous disease of the kidney may be attended with retinitis or retinal hæmorrhages, so in a two-fold manner tertiary syphilis may be the cause of renal retinitis. Also in the secondary stage of syphilis a catarrhal nephritis has been observed accompanied with retinitis. The retinitis of Jacobson, however, is not in this category, it is a primary syphilitic retinitis attended with marked cloudiness of the retina, slight papillitis, distension of the retinal veins, white spots and hæmorrhages. The following is a case of neuro-retinitis in a syphilitic subject and probably the result of that disease.

CASE 13.—A man came under my care recently complaining of "fulness in his eyes and being always foggy." His vision was $\frac{6}{}$ Sn. with each eye. He had a chancre fifteen years ago and was treated for syphilis at the Lock Hospital by Mr. Bloxam. He attributed his failure of vision to a blow on his head sustained three weeks previously. He was struck by a railway carriage door, which stunned him for a moment. He had a slight occipital headache, was not giddy, had no fits, and was only sick once after the accident. With the ophthalmoscope the optic disc was hazy, its outline was invisible and raised to the extent of one dioptre; in the right eye hæmorrhages existed just outside the macula, and in the left eye some white spots were visible outside the optic disc with a few hæmorrhages. His urine, examined three times at intervals, proved normal on each occasion. His pulse was not high tension nor was there any evidence of kidney trouble. His vision remained the same throughout his attendance.

There was nothing in his symptoms suggestive of intracranial mischief or Bright's disease nor had he had any recent illness such as influenza to account for it. If the retinal changes were consequent on syphilis it is interesting that they were symmetrical and developed so long after the chancre.

Papillitis, or inflammation of the optic nerve head, is frequently seen in syphilis. It may be unilocular, as already mentioned, in certain cases of retro-bulbar neuritis. On the other hand, it may be present in both eyes, either in association with retinitis or from the existence of some intracranial lesion. Syphilis is the cause of many intracranial troubles — pachymeningitis, thrombosis and softening, aneurysms, syphilomata, &c. Of all these syphilitic lesions the one most likely to cause double papillitis is an intracranial gumma. Cases of intracranial gummata are common; papillitis as a symptom is very constant. It behoves us, therefore, to go carefully into the history of the case, to be cautious in making a prognosis, and to treat persistently with iodides in spite of a negative history of syphilis. Only quite recently I had under my care a man with double papillitis the result, in my belief, of a syphilitic growth within his brain.

CASE 14.—The patient came under my care recently with pronounced double papillitis. He contracted syphilis in 1893 (sore on penis, big red spots all over his body, ulcerated throat, sores in the mouth, and subsequently gummata about his left knee which ulcerated). He was treated for syphilis at a military hospital; in fact, he was invalided out of the army for syphilis. Two months before he came under my observation he "became quite silly and light-headed and lost his memory. He suffered from frontal headache and was advised by his medical man to go into a cottage hospital, as he said he had a tumour in his eye." This information I gathered from his wife. It is probable that the medical man told her he had a tumour and because he examined his eyes she supposed the tumour to be in the eye. She said he improved while he was in the hospital. When I first saw him he was certainly deficient in his intellect and his memory was exceedingly bad. There were no motor or sensory disturbances. His condition improved under iodide of potassium, but whether he was completely cured or not I cannot say as I lost sight of him.

It is unwise to speculate too freely, though from the history, from the state of his mind, the absence of motor and sensory paralyses, and the presence of double optic neuritis, I was inclined to look upon the case as one of gumma in one or other of the frontal lobes.

If these syphilitic lesions yield to treatment the papillitis subsides with a varying degree of consecutive atrophy. If you come across cases of post-neuritic atrophy you will frequently elicit a history of syphilis. Many, too, are the cases of primary atrophy more or less remotely caused by syphilis. The para-syphilitic diseases of the brain and cord are so common and atrophy of the optic nerves so constant in both that I should not err very greatly if I ventured to remark that blindness developing in the course of tabes dorsalis or in that of general paralysis of the insane is without an exception the result of primary optic atrophy. The prognosis is very grave in primary atrophy. The vision gradually wanes until the sufferer is totally blind. In some cases anti-syphilitic treatment will arrest the progress for a time, but in most of these it is but temporary. Post-neuritic atrophy is not always accompanied by complete loss of sight; even good vision in one eye or both may be retained. Many, however, are the reverse of this, so that the prognosis must be guarded, but not so hopeless as in the primary form.

LECTURE III.

Delivered on Dec. 16th, 1897.

MR. PRESIDENT AND GENTLEMEN,—In my former lectures I dealt with ocular troubles due to acquired syphilis, I now claim your attention to those due to hereditary syphilis. As in acquired syphilis, the eyeball suffers more frequently and severely than the appendages. The eyelids and conjunctivæ are not, however, exempt. The former take part in the very general papular syphilide which appears on the face and rest of the body in these infants. An inflammation of the margins of the eyelids is not uncommon and it involves

the glandular structures of the eyelids; it is called marginal blepharo-adenitis or lippitudo syphilitica neonatorum. It is to a great extent dependent on a conjunctival catarrh associated with neglect. "Snuffles," or syphilitic rhinitis, is a more serious catarrh than that of the conjunctiva and at an early stage becomes purulent. It is serious in that the nourishment of the child is gravely impaired, for the child sucks with difficulty. It is one of the earliest manifestations and may be present at birth. It is of interest to ophthalmologists in that, starting as a simple catarrh, it becomes a muco-periostitis with excessive purulent and even bloody discharge and causes extensive destruction of the turbinated bones. The inferior turbinated bone, you will remember, enters into the formation of the nasal duct; it is easy to understand how this foul inflammation may involve very considerably this lacrymal passage. Hereditary syphilis is, in my opinion, a very common cause of lacrymal obstruction and lacrymal abscess secondary to the nasal trouble.

Diseases of the orbit in hereditary syphilis are rare. Periostitis or intra-orbital gummata may at times be seen.

In my first lecture I refrained from speaking at length on the subject of ocular paralyses though their frequency in acquired syphilis was mentioned. In the hereditary form of the disease they are rare, I might say very rare indeed. I do not remember having even come across a case. Lawford reports two instances in the *Ophthalmic Review* (1890) and refers to the literature of three others reported by von Graefe, Nettleship, and Hutchinson respectively. The age at which the paralysis occurred in these few instances varied from two years to twenty-six years. Complete recovery under anti-syphilitic treatment was the result in one of Lawford's cases and marked improvement in the other. Similarly intra-orbital lesions of the optic nerve are rare. There is not, as far as I have looked up the literature of the subject, a single recorded instance of retrobulbar neuritis caused by hereditary syphilis nor have I any notes of such a case.

By far the most interesting ocular disease of congenital syphilis is interstitial (or parenchymous) keratitis. It is characterised by a diffuse cloudiness of the whole cornea which becomes opalescent until no small area remains clear. It is not always uniformly milky; some parts may be yellowish-white; these are chiefly central; other parts at the periphery become a dull maroon-red—the so-called "salmon-patch." In the most severe cases the cornea presents the colour throughout. One eye is attacked at a time, the other as a rule follows in its wake as the first proceeds. It is rare to see the two eyes start simultaneously. The second falls a victim even under orthodox treatment after a variable interval, yet rarely suffers so severely as the first. Thus the inflammation appears to be only modified not prevented by treatment.

Interstitial keratitis must be distinguished from superficial keratitis, which precedes ulceration, and from the pannus which accompanies rough granular eyelids. In superficial keratitis the photophobia is intense and the surface of the cornea is dull. In interstitial keratitis its surface is uniform and glassy; it may be likened to the smooth side of ground glass. In pannus the redness can be seen with the unaided eye to be composed of distinct branches of superficial vessels coming from the conjunctiva; in interstitial keratitis the coloured patch is seen to consist of very fine deep-seated vessels which are only visible with a magnifying lens. The inflammation is remarkable for its quietness and its chronicity. Photophobia may be present but is usually slight. Circumcorneal redness is always present, but only pronounced in severe cases. It is a curious fact that although the cornea is inflamed throughout its whole structure it never becomes ulcerated in this affection nor does suppuration ever take place. It is exceptional even to find any disturbance of the surface epithelium; sometimes, however, it shows a fine granular change due to proliferation of the cells, but there is no loss of tissue. As a rule the prominence of the symptoms are in proportion to the severity of the attack and may be considered a fairly accurate guide in giving a prognosis. At its height the vision is very much reduced, often to the perception of light only. It is only when perception of light is absent that a bad prognosis is justified.

Such, then, are the chief features to be observed in the appearances and clinical course of parenchymatous keratitis. Its cause is in two out of every three cases hereditary syphilis. There are causes assigned other than syphilis, especially tuberculosis; this as a cause of parenchymatous keratitis is strongly upheld by von Hippel and his evidence is very convincing. For all that we may positively assert that at least two-thirds of the cases of interstitial keratitis are due to hereditary syphilis. To this conclusion we are guided in the main by the collateral evidences of syphilis. 1. Symmetrical deafness. This is unattended with discharge. The membrana tympani remains intact. This manifestation, the syphilitic teeth, and interstitial keratitis are called by some American surgeons the Hutchinsonian triad. 2. Interstitial osteitis of the long bones. The tibiæ are the bones which usually suffer, though any long bone may be affected. The tibia is lengthened, curved forwards, and its sharp crest rounded off and in severe cases quite obliterated. The nature of the inflammation is considered by many a chronic sclerosing osteitis, but certainly this is not always the case, for a typical instance of this affection examined by Clutton[2] showed well-marked diffuse symmetrical osteo-porosis. 3. Symmetrical chronic synovitis. 4. Stunted growth. 5. "Café au lait" complexion. 6. Radial scars at angles of the mouth and evidences of past ulceration in the fauces, &c. 7. Depression of the bridge of the nose with increase of breadth. 8. The frontal scalp-line indefinite. A gradual instead of a sudden transition of skin of forehead into the piliferous skin of the scalp. Downy hairs are traceable to the eyebrows. 9. Hutchinsonian teeth. The central incisors in the upper jaw are the most reliable. Peg-shaped, spaced, notched, and stunted are the four characteristics. 10. Natiform skull. 11. High-arched palate. 12. Smooth atrophy at the base of the tongue. This last sign of congenital syphilis was pointed out by Virchow as being pathognomonic of hereditary syphilis and present in about 50 per cent. of the cases. I have in conjunction with Mr. Griffith examined a considerable number of congenital syphilitic children and adults, but neither by the sense of touch nor by the use of a laryngoscopic mirror have we been able to discover a single instance of this form of atrophy.

Besides the existence of collateral evidence at the time of the keratitis we have the valuable history of the patient's infantile troubles—"snuffles," rash, sores at the buccal and anal orifices; possibly a history of pemphigus, meningitis, and other early syphilitic diseases; the history of the mother having had miscarriages, stillbirths, and infants dying before they are three months old. The first pregnancy terminating in a miscarriage after the fifth month is strongly suggestive of syphilis. A succession of miscarriages and stillbirths is more valuable than many of the collateral signs above mentioned. Besides, they are so often wanting that it has produced scepticism on the part of many surgeons that hereditary syphilis is so common a cause of interstitial keratitis.

With regard to the pathology of interstitial keratitis I have little to say. It is now almost universally admitted that this form of keratitis is secondary to a primary inflammation of the ciliary zone of the eye—the sclera and the ciliary body. It is true that in the severer forms of interstitial keratitis, if not in all, keratitis punctata is present. There is also a great tendency for the uveal tract to become inflamed throughout.

What are the chief principles in the treatment of interstitial keratitis? Firstly, physiological rest; this is accomplished by paralysing the ciliary muscle and sphincter pupillæ. Secondly, the prevention of iridic adhesions. Thirdly, the relief of symptoms by local sedatives. All can be carried into effect by the use of atropine and by ordering neutral tinted dark glasses. So long as there is any inflammation present this drug must be instilled into the eye. It should, moreover, be the only drug used locally during the active stage. When the symptoms become less pronounced the keratitis may be stimulated by the use of the yellow oxide of mercury ointment combined with cocaine and atropine. Finally the yellow oxide of mercury ointment must be used by itself until the cornea is clear. Throughout the attack mercury should be given either in the form of inunctions or by hypodermic injections. Tonics may be given at the same time. It is well to intermit the mercury two, three, or four times during the attack, but never for longer than a fortnight. The diet and habits of the patient must not be overlooked. Daily exercise is very important

[2] Transactions of the Pathological Society, vol. xliv.

and only in very exceptional cases is it necessary to confine the patient to the house.

Before leaving this subject let me say that when a patient suffering from syphilitic keratitis is brought or comes to us, be it a child or an adult, we must warn the patient or the parents that the inflammation in the eye cannot be cured under a period of two or three months, and moreover that as the affected eye is getting well the other will almost inevitably follow suit and run a similar though less protracted course. We cannot prevent the second eye from having an attack, but by the constitutional treatment we have adopted for the first eye the inflammation in the second is rendered less severe.

THE IRIS.

Iritis may occur at various periods in hereditary syphilis It is as a secondary manifestation, relatively infrequent as compared with the iritis of acquired syphilis. It may develop before birth, at birth, a few weeks or months after birth, or much later in the disease either in association with interstitial keratitis or as a part of a sero-plastic irido-cyclitis. Primary iritis occurring in infants or young children is almost always due to syphilis (Soelberg Wells).

Intra-uterine iritis is an assumption based on strong evidence—the existence of iridic adhesions to the capsule of the lens. Posterior synechia can only be caused by iritis, yet attachments of the iris to the lens may be seen as congenital anomalies from imperfect absorption of the capsulo-pupillary membrane. In this condition there is no drag on the pupillary margin of the iris, the pupil will dilate fully under atropine even if the tags are multiple, whereas in eyes which show signs of intra-uterine iritis one adhesion may, and usually does, produce a distinct drag on the iris when a mydriatic is employed. It is the exception to find a single synechia, the adhesions often extend to the whole circumference of the pupil save small points of freedom which allow pouch-like dilatations to appear if atropine is used.

Another feature of special interest is the existence of one, two, or more white spots, like small white beads, which resemble very much anterior polar cataracts, on or in the capsule of the lens differing only from a pyramidal cataract in being eccentric. Whether these spots are patches of organised lymph or capsular changes similar to those seen in anterior polar or pyramidal cataract the microscope alone can prove. I personally am inclined to the latter view and believe that as the cataract is produced by the drag on the lens-capsule after the close of a central corneal perforation, so the posterior synechia by its drag on the capsule has a similar influence upon the growth of the capsular epithelium at its point of attachment. Only does this happen at the site of the adhesions contracted early in life or prior to birth. The relationship of intra-uterine iritis to syphilis has not been very definitely established. Some of the few cases that have come under my observation lend themselves to this belief, but others discountenance the supposition that they are proof of syphilis.

Congenital iritis differs from the former in that the inflammation occurs at or a few hours after birth. With intra-uterine iritis the inflammation is a thing of the past when the child is born. There is no doubt in the minds of ophthalmic surgeons that syphilis is the essential cause of congenital iritis. I have never yet seen a case without positive evidence of syphilis either in the mother's history or from collateral signs in the child.

Hutchinson has collected a series of cases of iritis (infantile) which developed between the ages of six weeks and sixteen months. He commences his monograph "On Diseases of the Eye consequent upon Hereditary Syphilis" with the notes of twenty-three cases and concludes with an interesting summary. He mentions that the female sex is more prone to suffer than the male. Both cases quoted above happened to be females. If we accept the theory that interstitial keratitis is secondary to inflammation of the ciliary region of the uveal tract it is very remarkable that iritis as a complication is not more common than it is. It does however occur in a large number of cases and after the subsidence of the keratitis signs of iritis are evident by the presence of synechiæ or patches of pigment on the lens. It is seldom that extensive adhesions are formed, but in the worst cases this takes place, the lens becomes cataractous, the eye loses tension and is finally lost.

Iritis apart from keratitis has been described by Brailey as a tertiary phenomenon both in acquired and hereditary syphilis. In my last lecture I pointed out that these cases belong more to the class of sero-plastic irido-cyclitis than that of simple plastic iritis; it is so also with those which occur in the hereditary disease. Brailey points out that the iris in this affection is apt to become adherent at its periphery to the cornea around its whole circumference and in this manner to bring about secondary glaucoma.

THE CHOROID.

In a similar way to that seen in acquired syphilis the inflammation in the uveal tract may creep slowly backwards in hereditary syphilis and involve successively the iris, the ciliary body, and the choroid. The periods at which choroiditis is especially liable to manifest itself are, as one would expect, at those times in the course of conjunctival syphilis when active inflammatory troubles develop in other parts of the body. If I ventured to state that in quite 90 per cent. of all cases of hereditary syphilitic choroiditis the inflammation starts either within the first two years of life or during the period of puberty in association with other tertiary manifestations I should not err to any great extent, if at all, for such has been my experience. Do not for a moment misinterpret my meaning. If the tertiary manifestations appear early or late so will the late choroiditis vary. Again, a choroiditis as a secondary manifestation may smoulder on just as in acquired syphilis and extend as a chronic serpiginous choroiditis for many years, and finally prove an interstitial fibrosis of the choroid and retina similar to, and with ophthalmoscopic changes identical with, pigmentary choroido-retinitis about which I spoke in my last lecture.

Disseminated choroiditis appears as often in hereditary syphilis as in the acquired form. It presents identical changes in the fundus oculi. It may remain as a discrete eruption or by the formation of fresh foci and the spread of old lesions become confluent and map out large areas of destruction. This form of choroiditis manifests itself early in congenital syphilis in the second phase of the disease almost any time between the age of six weeks and two years.

Let me quote a severe case of choroiditis starting in infancy associated with retinitis.

CASE 1.—A lad, now aged sixteen years, has been under my care since he was an infant in arms. He was brought to the hospital when he was a year old as his parents thought he was blind owing to the aimless movements of his eyes. Any object held in front of his eyes he did not appear to notice. I found that he had choroido-retinitis seen imperfectly through a cloudy vitreous humour. I adopted a mercurial treatment. His parents have since then died and his aunt informs me that when this boy was five years old they both died within a month of each other, she thought from "consumption." He is the only child living. Thirteen months before his birth his mother had a stillborn child, subsequently she had a miscarriage and one child which only lived a month. At the age of eight and a half years he came under my care again suffering from interstitial keratitis and spent the whole of the year 1890 and part of 1891 in being treated for this trouble which was unusually severe and complicated with iritis. The right eye was first attacked and general choroido-retinitis was recorded as being present in the left eye. Subsequently the cornea of the eye became inflamed and obscured the fundus from view. The present state of his eyes is as follows. As regards the right eye he can count fingers at a distance of one metre. The pupils dilate irregularly. Atrophied vessels are seen in the cornea, white atrophic patches in the fundus oculi, and no pigment, not even at the periphery. The disc is pale and waxy-looking and the retinal vessels are thready. There is high myopia. With the left eye there is barely perception of light, total posterior synechia, and complete opacity of lens. The tension is normal. The eye is divergent. The collateral evidence of syphilis in this patient also was not very marked, but the history of his mother's miscarriages, &c., point very decidedly in this direction.

I could enumerate case after case illustrating the similarity of the changes in the fundus oculi of hereditary syphilis to that of the acquired form. Apart from the history it would be difficult to decide from the fundus changes alone which was the cause. It happens, however, that in the hereditary form we find more often than not *myopia*. We should expect myopia to develop in such cases as the tunics are diseased during the period of growth and so yield to the normal intraocular pressure. Another evidence of congenita syphilis is the presence of atrophied vessels in the cornea. If, therefore, we find associated with choroiditis or choroido-retinitis high myopia and traces of former interstitial keratitis we may safely conclude that hereditary syphilis is the cause

There is a feature in cases of choroido-retinitis, especially the pigmentary form, which I have not yet mentioned, although it is as common in the acquired as in the congenital variety. I refer to glaucoma. Many of these cases terminate in this way. The specimen shown at my last lecture was an eye excised for glaucoma secondary to syphilitic

pigmentary choroido-retinitis. That was one due to acquired syphilis; I will give you an illustration of one due to the hereditary disease.

CASE 2.—A single woman came under my care at St. Mary's Hospital complaining of night blindness and having had bad sight since birth. She had a convergent strabismus and a slight degree of hypermetropia. Retinitis pigmentosa was diagnosed and it was discovered that the right disc had a glaucoma cup and the tension was + 1. The visual fields were very contracted; the right vision was $\frac{1}{5}$ and the left vision $\frac{1}{60}$. She was ordered quinine. On her next visit ten days later the following notes were made: "Depressed nasal bridge, marked ozæna with history of 'snuffles' as a baby. Hutchinsonian teeth, café au lait complexion. Iodide of potassium was ordered." Beyond the pigmentary changes in the fundus resembling retinitis pigmentosa the discs were atrophic and the vessels contracted to fine threads. Slight choroidal atrophy was also seen. In 1894 the vision was reduced to recognising fingers only, the cup in the right eye was deep, and the tension + 2; eserine was therefore ordered.

Occurring at so early a date we need not look upon the glaucoma as coincident, it is dependent upon the choroido-retinal disease. One day this eye will be acutely glaucomatous and have to be excised. Sometimes the evil day can be postponed by reducing the glaucoma by leeches, fomentations, and a free purge. Finally, however, the eye will find its way into a pathological collection. Operative interference is certainly not advisable in the complaint.

Papillitis is not a common manifestation of hereditary syphilis, but a sufficient number of cases of post-neuritic atrophy have come under my care to justify my belief in its existence. These cases are children ranging from six months to two years old or more. They are brought on account of nystagmus and aimless movements of the eyes. The mother thinks the child is blind. In some cases it is possible to obtain a history of fits, hydrocephalic cry, and retraction of the head, whereas in others no history of meningitis can be elicited. I am however inclined to look upon such cases as instances of double papillitis caused by a syphilitic meningitis.

The crystalline lens is largely dependent for the transparency upon the integrity of the ciliary body or secretory apparatus of the eyeball. If cyclitis is followed by atrophy of the ciliary body the lens becomes cataractous and subsequently undergoes calcification. In the worst cases therefore of uveitis in which the iris becomes glued to the lens, the ciliary processes shrunken, and the choroid and retina inseparably blended into an irregularly pigmented fibrous membrane the lens will be opaque, possibly calcified, the tension of the globe will be reduced and the function of the eyeball absolutely destroyed. There are, however, other forms of lenticular opacities. I have already referred to the small eccentric white opacities in the anterior capsule seen in cases of congenital and intra-uterine iritis. I wish now to refer to an opacity at the posterior pole of the lens. A true posterior polar cataract is not small, opaque, and well defined as it is usually depicted in text-books; it is a thin and semi-transparent or diaphanous opacity with processes radiating towards the periphery. Under the microscope it is seen to be composed of globular degeneration of the lens fibres. Posterior polar cataracts may be seen in primary pigmentary degeneration of the retina or in the pigmentary forms of syphilitic choroido-retinitis. Whether it is possible for this opacity to develop without changes in the ciliary body microscopic investigation may some day show, but as most eyes with this trouble come into the pathologist's hands owing to secondary glaucoma in which the ciliary body shows definite charges there is considerable difficulty in deciding the question. Another variety of cataract is seen in infants with hereditary syphilis, the lens is milky in appearance and varies very often in density in different parts. The following are the notes of a case I had under my care in 1890.

CASE 3.—A little girl, aged six years, has milky opacities in each lens, worse in the left eye. Small posterior synechiæ are also found in the left eye. The fundus is invisible through the opacity. The right vision = $\frac{1}{5}$ Sn. and the left vision = p. l. only; there was bad projection. She had "snuffles" as a baby. Her mother had one miscarriage and lost one child with "fits." There is a history of sore-throat and loss of hair in the mother. This child besides having double cataract had iritis either intra-uterine or early in life. This is interesting as cases in which iritis occurs in infancy are more liable to develop cataract.

As to the treatment of this form of cataract I wish to speak reservedly. Though there may be no adhesions and the cataract appears soft and milky and easy to dissolve by needling such is not the case. Though the eyes are fairly tolerant of operation and show little or no inflammatory reaction you will find that cataract is tough and follows the movements of the needle. It is very difficult to break it up and assist its absorption. The after results may be fair for a time, but I have recollection of seeing several cases of blindness in which a cataract has been needled in infancy and the subject had unmistakeable signs of syphilis. If they live they grow up as a living testimony of an unsuccessful operation. The operator is often blamed instead of the sins of the father. The retina is generally found detached in such cases. I have included posterior polar cataract and cataract secondary to uveitis in this lecture on hereditary syphilitic diseases. Both may be seen in the acquired form—in fact, they are as frequent in the one as the other. The diffuse milky lenses and the opacities at the anterior pole of the lens are cataracts of the hereditary disease.

Besides the lens another medium may interfere with the projection of rays of light on the retina. The vitreous humour may be turbid owing to fine dust-like opacities, a condition called hyalitis or inflammation of the vitreous humour. It is always secondary to inflammation of the uveal tract alone or that in association with retinitis. It is a sign of inflammation in the tunics of the eye, it is not a disease *per se*.

[After referring to the value of mercury not only in existing early syphilitic manifestations but in rendering milder those which will follow later Mr. Juler continued:]

I usually commence treatment with two and a half grains of blue pill night and morning, seeing the case at least once a week, and watching for any sign of soreness of the gums, salivation, or intestinal irritation. I believe the grey powder and the biniodide of mercury mixture to be equally efficient to the blue pill. Should this internal administration produce griping pains, diarrhœa, or other digestive derangement, I resort at once to the inunction of mercurial ointment to the inside of the arms and thighs. About one drachm of this is well rubbed into the skin of these parts after a warm bath every night before going to bed; the patient may wear a woollen combination garment kept for the purpose, so as to protect the bed-clothes. In the morning another warm bath will clear away the ointment for the day, and it is renewed again each night. If the patient is able to continue in bed the ointment can remain night and day but even then I prefer to give a hot bath once in twenty-four hours. My experience of the injection of mercurial salts into the veins, the muscles, and the subcutaneous connective tissue is at the present time too limited to enable me to speak of either method with much confidence.

In the early secondary stages I prefer to give mercury alone. In the later secondary and early tertiary I prefer the combination of mercury with iodide of potassium. In advanced tertiary conditions the combination of decoction of sarsaparilla with iodide is of service. For children suffering from inherited syphilis I am convinced of the advantage of mercurial inunction combined with the internal administration of iodides. In whatever form administered the action of the drug should be jealously watched by the surgeon against the bad effects of ptyalism. A prolonged course of mercury short of salivation is in my opinion the best way of completely curing the disease and the drug should be continued for weeks or even months after all active signs of this have disappeared.

THE LIVERPOOL CREMATORIUM AND FUNERAL REFORM.—The managers of the Liverpool Crematorium have addressed a second circular to the members of the medical profession pointing out that the establishment has been open for fourteen months and that ten cremations have been satisfactorily performed. They believe that the system only requires to be better known to be largely adopted. The process of cremation is now performed with confidence; the result is cleanly and complete. They crave the assistance of the medical profession in advocating the system and in brushing away the sentimental and other prejudices which to a large extent have stood in the way of popularising this sanitary method of disposal of the dead. It is pleasing to note that here and there funerals are conducted in a sensible manner. Funeral reform though often advocated makes but little headway, especially among the poorer classes. A few days ago the body of the child of a Liverpool veterinary surgeon was enclosed for interment in a coffin composed of woven basket-work. The frame-pieces only were of oak and the rest was a basket shaped like an ordinary coffin. It is advocated for this basket-coffin that it is strong, perfectly air-tight, fulfils all sanitary requirements, and is admirably designed for speedy assimilation with the soil. It has another advantage in being much cheaper than the ordinary and more popular form of bulky wooden coffin.

Two Lectures
ON
URINARY FEVER.

Delivered at the London Hospital on Nov. 10th, 1897,

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LECTURE II.[1]

GENTLEMEN,—In my last lecture I dealt with two of the forms of urinary fever, and showed that their real cause was the sudden entrance into the circulation of the septic products of some of the organisms growing in the urine or on the walls of the urinary passages. In this lecture I wish to deal with two other varieties, the symptoms of which are equally well marked although of an entirely different character. The first of these is by no means uncommon. During the last few months there have been several cases in the wards that will serve as illustrations.

The most characteristic examples are met with in old men suffering from chronic interstitial nephritis and atony of the bladder at the beginning of what has been called catheter life. The symptoms so far as their broader features are concerned present but little variety. The urine is clear and free from pus. There is no cystitis or suppurative pyelitis. The reaction is faintly acid. The specific gravity is low and the quantity unusually large considering that we have to deal with patients who, if not bedridden, are leading very quiet lives. The first introduction of a catheter does not, as a rule, give rise to any disturbance. Nothing even may be noticed for a week. But generally about the third or fourth day (if the catheter is passed every day) a certain degree of irritability is complained of about the neck of the bladder. There is a desire to pass water more frequently; and the call cannot be resisted. It must be obeyed at once. Then the urine is noticed to be slightly cloudy, though it still remains acid; and now there may be a small quantity of albumin present, though it was not there a few days before. The total amount passed in twenty-four hours, too, begins to fluctuate. Sometimes it falls so low that there is reason to fear that suppression may follow. Sometimes, on the other hand, it increases until there is a veritable polyuria. In one patient under my care the amount rose to between seven and eight pints in the twenty-four hours for many days together. Under the microscope there are a few hyaline casts, perhaps a blood corpuscle or two, pus corpuscles in abundance, and myriads of bacteria. If a culture is made the bacterium coli is almost always present, and in a very large proportion of cases unmixed with any other. Meanwhile the patient is feverish. There is seldom any definite rigor but there may be numerous slight chills. The pulse grows more rapid and feeble. The tongue, red and dry at first, soon becomes brown. There is complete anorexia. Delirium sets in at night and unless a change is effected at once the symptoms grow worse and worse until at the end of ten days or a fortnight the patient sinks into a semi-comatose state from which he never rallies. Of such cases I am afraid you must have seen a considerable number. One is in the wards at present in whom, thanks to early and effectual drainage of the bladder, the symptoms have entirely subsided. He is, however, a much younger man than most and his troubles, though of the same class, are due not to enlargement of the prostate but to sloughing of the urethra consequent upon extravasation of urine.

The pathological changes in these cases are always the same. Everywhere there are signs of recent acute inflammation and, underneath, the changes induced by long-continued chronic disease. The mucous membrane of the bladder is stained here and there by recent hæmorrhages. Flakes of lymph are scattered about upon it and the edges of the folds and ridges have lost their epithelial covering. The interior of the ureters and the pelvis of the kidneys is in the same state. The kidneys themselves are small, hard, and contracted. The apices of the pyramids are eroded and in places between the tubules and under the capsule there are minute collections of pus differing in shape and outline according to the anatomical arrangement at that particular spot. In other words, suppurative cystitis and ascending pyelonephritis have been added to the changes induced by long-continued obstruction to the exit of the urine. If cultures are made from the urine in the bladder or the pus that is found in the pelvis of the kidney or between the tubules the same organism, the bacillus coli, is nearly always present. As a rule when the urine is alkaline it is associated with others. I have, however, found it pure, or almost pure, in most cases in which the urine was still acid.

The symptoms in these cases are usually assigned to shock and suppression of urine caused by the suddenness with which the change is made from the natural and usual mode of micturition to the artificial one, and the method of treatment that is recommended is to empty the bladder by slow degrees instead of doing so all at once. I am convinced, however, that emptying the bladder has nothing to do with them. I do not deny for a moment that rapidly drawing off a large quantity of residual urine through a large catheter while the patient is standing upright would be followed by syncope and very likely, as patients who suffer from a large amount of residual urine are almost all of them aged and broken down in health, by sudden death; but these cases are not to the point. They present no resemblance in their clinical history or their pathology to those that I have in hand and I am happy to say they must be very rare. I have not only never seen one but I have never heard of such an instance either at hospital or in private practice.

Shock will not account for the symptoms or for the pathological changes. The shock that follows operations upon the urinary organs is always immediate in its action. It may affect either the whole nervous system or only those parts of it that are in close physiological relation with the nerves of the injured structures. In the former case the patient falls at once into a state of collapse; the functional activity of every organ in the body is suspended more or less completely and the kidneys and the bladder suffer with the rest. In the latter the kidneys and bladder suffer chiefly if not exclusively. While other organs are but little affected these lose their power of working and either suppression or retention of urine follows according as the influence of the shock falls more heavily upon the nerves that control the kidneys or those that control the bladder.

Now the troubles that are caused by the evacuation of residual urine (except in those cases which I have already excluded) never begin at once. There is always an interval—always of some days, sometimes of more than a week—and when they do set in they begin not suddenly but quietly and insidiously; they cannot therefore be due to shock. Nor are they due to suppression: in the first place because in many instances there is no suppression but exactly the opposite condition—polyuria. I have met with this on several occasions; in one case the quantity passed in twenty-four hours rose to between seven and eight pints. And, in the second place, because the symptoms that are present in these cases bear but a very remote resemblance to those that occur in true suppression of urine—such, for example, as that which is caused by obstruction of the ureters. Total suppression may continue for ten or even fifteen days before it proves fatal. In many instances there are no symptoms at all for the first seven or eight days. When they do set in there is no continued fever or rigors or delirium. Failure of muscular power and weakness of the pulse are the characteristic features, while consciousness is retained to the last. The symptoms in these cases therefore cannot be due to suppression, although it is quite possible that when there is partial suppression they are aggravated and complicated by it. Naturally if the toxins that are absorbed from the urinary passages are not excreted by the kidneys they accumulate in the blood together with the other deleterious substances that should be got rid of in the same way and produce a proportionately greater effect. On the other hand these symptoms are identical in every respect with those that occur after operations performed upon the same kind of patient if the wounds become septic. The gradual onset, the condition of the pulse and tongue, the delirium at night, and the steadily-advancing weakness without any marked degree of fever are exactly what is met with in the so-called exhaustion that proves the end of so many septic operations in the aged. The symptoms are identical, in other words, with those of

[1] Lecture I. was published in THE LANCET of Dec. 18th, 1897.

slow septic poisoning and they are due to the gradual absorption of the toxic products of the organisms growing in the urine and on the walls of the urinary passages. They may be modified by the failure in the excretory power of the kidneys which prevents the system getting rid of the poisons as rapidly as it should; but the essential cause is the absorption.

In all these cases the first symptom is the same. Suppurative cystitis manifested by the turbidity of the urine and the irritability of the bladder is always the beginning; and this is always due to septic organisms. I have examined the urine from a very large number of these cases and septic organisms are always present, generally the bacillus coli, sometimes alone and sometimes in conjunction with others. Suppurative cystitis never occurs without them. The entry of septic organisms into the bladder is the starting-point. These organisms do not get in by themselves. Residual urine may exist for many years without their getting in or cystitis taking place. They do not get in until a catheter is passed and they get in then because they are carried in by the catheter. A catheter that has never been used is sometimes aseptic. You may fail in getting a culture from its surface. After it has been used two or three times and has been cleaned in the ordinary way it is never sterile. You will never fail with it then.

Two facts bear out this statement very strongly. One is that these consequences rarely set in if a catheter is only passed once. They do not set in until the instrument has been used three or four times—until, in other words, it has become septic. The other is that they very rarely occur at all in cases in which catheters are never passed. They do not occur when a bladder is drained through the perineum or when an aspirator is used, even if it is used four or five times successively, provided, that is to say, that at the end of that time the patient has so far regained control over his bladder that a catheter is not required afterwards. I have notes of fourteen cases of complete retention in which an aspirator was used and the bladder emptied as thoroughly as possible but no consequence of this kind followed in any one of them. The cause of the symptoms is not the emptying of the bladder. They cannot be accounted for by shock or by suppression of urine or reflex congestion of the kidneys. They are dependent upon the use of catheters and in some other way than through the reflex action of the nervous system. They are due to the entrance of septic organisms. As soon as these septic organisms enter the bladder suppurative cystitis follows. Nothing is more favourable to their growth than stagnant urine mixed with a trace of albumin and kept at the temperature of the body. In a very little while they convert the contents of the bladder from a comparatively harmless fluid into an intensely poisonous one. Under ordinary circumstances when the bladder can empty itself thoroughly and at frequent intervals their entry is not a matter of such serious moment. The frequency of micturition which is so invariable in cystitis is a perfectly adequate protection. But in these cases the bladder has lost the power of emptying itself, a certain amount of urine always remains behind, and the result is what might be expected. No sooner have the organisms begun to grow than they spread up the ureters and involve the pelvis of the kidneys. The walls of the ureters in these cases are almost always thin and flaccid. The calibre is often wider than natural. The valve at the entrance into the bladder does not act and owing to the degenerative changes already present the tissues themselves are incapable of making any effectual resistance. In a very little while the micro-organisms spread in all directions through the kidneys and suppuration and septic absorption rapidly follow. There is no rigor or conspicuous rise of temperature because the poisoning is so gradual, but in all other respects the symptoms are identical with those that occur when septic intoxication takes place from other causes in patients of a similar description.

Whose fault is it that these organisms get in? Do they come from the urethra swept in by the catheter or is the catheter septic before it enters the meatus? I am afraid in the majority of cases the fault is in the catheter. It is true that the urethra always contains germs and that they cling to it so closely that it is almost impossible to render it sterile by washing it out, but these germs are for the most part non-pathogenic. Their presence does not matter if they do happen to be carried into the bladder. As soon as the urethra becomes inflamed there are septic organisms in abundance; but inflammation of the urethra is rare under these conditions unless it has already been caused by instrumentation. In the vast majority of cases the catheter itself is to blame. No one would think of using a scalpel that had been used already on a septic case or on any case at all without having it thoroughly sterilised first. Yet though catheters are much more complicated instruments and though every case of cystitis, no matter how slight it is, is septic, catheters are used again and again with only the most perfunctory cleaning. These consequences may be avoided with almost absolute certainty if proper precautions are taken and catheters are sterilised as they ought to be even though the bladder is emptied thoroughly. I have proved this in my own practice.

I look upon the evacuation of a large amount of residual urine as a serious surgical proceeding and requiring the same precautions that are adopted in the case of any other surgical operation. The patient should be prepared in the way I have described in my last lecture. The hands, the glans penis, the prepuce, and especially the meatus are thoroughly washed with soap and water and then with a disinfectant that can be relied on. I prefer corrosive sublimate, one part in a thousand. Every instrument is boiled and wrapped in carbolised lint. The lubricant is sterilised. It is of no use to add an antiseptic. If the antiseptic is a weak one it does no good; if it is strong enough to be of any use as a germicide it injures the mucous membrane of the urethra. I prefer Melchior's catheter in combination with one of my own, made for me by Messrs. Maw, Son and Thompson, as the inner of the two. The whole of the urine is allowed to drain away quietly without using any pressure upon the bladder. If the amount is large this often takes some time as the inner catheter is only a No. 5 English. This is done twice a day until the bladder has begun to recover some degree of tone, the patient meanwhile, as in the case of every other serious surgical operation, being confined to bed. Every day a culture is made from the urine, selecting the last portion passed, and if on the following day there is the faintest suspicion of a growth (it is quite possible to detect it in twenty-four hours if the temperature is kept up) or if the urine is cloudy or if there is any sign of irritability of the bladder some nitrate of silver is injected into the neck and if this does not stop the symptoms at once the bladder is kept empty either by tying a catheter into the urethra or by incision according to the circumstances of the case. Germs are not capable of harm in a bladder that is kept empty. The real danger is not in emptying the bladder but in failing to do so. The walls are flaccid and toneless and if the urine is allowed to escape rapidly they collapse and form a number of folds between which a certain amount of urine collects ready to become a virulent poison if only the germs can enter in.

The fourth variety of so-called urinary fever need not detain us long. It is characterised by symptoms that present a superficial resemblance to those of the one that I described first—especially to that form of it in which rigors occur at intervals. In this, too, rigors are present. But they do not begin upon the first day. They occur without any definite exciting cause, sometimes irregularly, sometimes at intervals so uniform as to suggest an attack of remittent fever. They bear no relation to the act of micturition. The temperature is not normal in the intervals, and they are accompanied by other evidences of constitutional infection. These cases are fortunately rare. I am acquainted with only two, one of which however occurred in my practice only a short time since. The patient was a man fifty-eight years of age apparently healthy, who was suffering from partial retention of urine consequent upon a polypoid outgrowth situated at the neck of the bladder. This growth acted like a ball-valve falling into and completely closing the outlet long before the bladder was emptied. An opening was made in the perineum; the pedicle which was very narrow was twisted off and the growth removed without any difficulty. There was little or no external hæmorrhage but, as often happens in these instances, there was considerable oozing afterwards and coagula formed in the bladder. For the first three days everything went well. There was some difficulty in micturition owing to the coagula but not sufficient to require the passage of a catheter. Then a rigor occurred and the temperature did not fall to its former level after the shivering had passed. The next day there was another rigor and from that time until the patient died, three weeks later, the temperature chart never ceased to exhibit the most extravagant oscillations. There were on

local symptoms, with the exception of an attack of diarrhœa lasting some days during which the motions were intensely offensive and three days before the end thrombosis of one of the popliteal veins. The wound went on well and was almost healed at the time of death. The power of voluntary micturition and of emptying the bladder was regained. The urine remained acid throughout even when the coagula were present. The quantity and the specific gravity were good and there was no albuminuria after the blood had disappeared. But the strength failed more and more. The body became extremely emaciated. The face assumed the characteristic jaundiced appearance and at last a condition of stupor supervened. Unfortunately the blood in this case was not examined, but there can be no question that the immediate cause was septic infection and that this was due to the entrance into the circulation of an exceptionally virulent form of the bacterium coli. The circumstances of the operation were such as to admit of the possibility of a large number of these bacteria entering at once. There was considerable venous hæmorrhage and owing to the obstruction caused by the coagula at the neck of the bladder the pressure in the bladder must have been raised considerably during micturition. The urine was loaded with the bacterium coli. It was examined many times but no other organisms worth mentioning were present in it. The reaction was strongly acid throughout and it contained a considerable quantity of indol. Where the bacteria came from cannot be said with any degree of certainty. The usual source is the intestine directly or indirectly and from the particularly offensive character of the stools there can be little doubt that the bacteria that inhabited the colon in this case were of an exceptionally active type. It is true that the bacterium coli does not readily give rise to septic infection such as this. The circumstances must be exceptionally favourable. An intermuscular injection, for example, in the case of rabbits is not followed by general infection. It merely gives rise to local suppuration But when the conditions are suitable the bacterium coli is capable of causing a most intense form. If other organisms are present as well or if a large amount of its own toxic products are injected into the veins at the same time there is hardly any organism that surpasses it in activity or virulence. Cases of septic infection such as this following operations upon the urinary organs are happily very uncommon. But it seems probable that many of the instances of so-called urinary fever in which prolonged illness with frequent rigors and no definite local symptoms has followed internal urethrotomy and other similar measures are really due to general infection. Either the virulence of the infecting organism is less or the resisting power of the blood and of the tissues is greater, and the patient after a time recovers.

These are the four varieties of so-called urinary fever that I wish to lay before you. I do not mean to say that every case of fever that follows operations upon the urinary organs is capable of being grouped under one or other of them, and that you will be able to say of each, This is a case of septic intoxication due to a particular organism and that of septic infection. That is certainly not the case. Very few examples are so well defined as those I have brought before you. Nearly all are complicated either by admixture with other forms of septic inflammation or by the effects of pre-existing renal disease My object is to point out to you that there is nothing special or peculiar about these troubles, that they are not examples of "neurotic fever," and that there is no need for any such name as "urinary fever" or to appeal to that last refuge of the destitute the reflex action of the nervous system for an explanation for them. They are merely ordinary septic complications that can be avoided in the vast majority of instances by strict attendance to ordinary surgical principles. The sole point in which they differ from septic troubles in general is that the organism that is most frequent instead of being a staphylococcus or a streptococcus is a bacillus, the bacillus coli, which has for its ordinary habitat the alimentary canal and which has been proved to be the immediate cause of inflammation of the bladder in quite nine cases out of ten.

HER MAJESTY THE QUEEN, who has for the past fifty years been Patron of the Royal Hospital for Diseases of the Chest in the City-road, has sent 70 lb. of cast linen for the patients.

THE DIAGNOSIS OF COUGH.[1]

BY MAYO COLLIER, M.S. LOND., F.R.C.S. ENG.,
SENIOR ASSISTANT SURGEON TO THE NORTH-WEST LONDON HOSPITAL.

COUGH as a symptom or indication of some irritation in the upper or lower respiratory tract or other parts is the commonest affection the human frame is subject to, and yet experience shows one that few medical men are taught to become sufficiently expert in the use of those special instruments requisite to properly investigate many cases that present themselves. Given any case of cough that may present itself for diagnosis and treatment I would maintain that a proper and thorough examination cannot be made nor can a correct diagnosis be arrived at in a majority of cases without the following instruments—stethoscope, laryngoscope, and nasal and ear specula. Now before I go one step further I will justify my statement by illustrations from my note-book.

CASE 1.—A boy, aged thirteen years, had a chronic cough with wasting for two years and attacks of asthma almost nightly. The physician in attendance diagnosed weak lungs. Treatment was by cod-liver oil, cough mixture, and Bournemouth. Up to the time I saw him no examination of nose, larynx or ear had been made. Examination revealed complete nocturnal nasal obstruction. The restoration of nasal respiration quickly supplanted cod-liver oil, Bournemouth, and cough mixture and effected a complete restoration of health.

This case illustrates the necessity of being able to use the nasal speculum and being versed with the more common affections of the nasal chambers.

CASE 2.—A girl aged eighteen years was deaf and had an offensive discharge from both ears. She complained of harassing cough of eleven months' duration. The lungs were normal, the throat was affected by chronic pharyngitis, the nose by chronic rhinitis, and there were fossæ on the septum on both sides opposite the lower turbinated bones. There was also perforation of both tympanic membranes and a large polypus was springing from the edge of the perforation on the right side. Violent coughing was induced by examining or syringing the ear. Polypus removed; exit cough.

Had I time I could multiply a thousandfold these illustrations, but, to return to my subject, I wish to point out that given a patient suffering from a cough the betting to start with, before any examination is made, is ten to one against the cause or source of irritation being in the lungs. Now this is another bold statement, but if I can show reasonable justification I shall be acquitted of any suspicion of being out of my mind or something worse.

A long experience extending over fifteen years in examining patients and treating affections of the upper respiratory tract has convinced me that most of the ordinary complaints found in these regions are directly due to improper, abnormal, and unphysiological methods of taking in the air so requisite to the health and vitality of the body. Catarrhal inflammation is the pathological accompaniment of this unphysiological inspiration and cough is its invariable companion. Some of the older practitioners would and do stand aghast at the heresy contained in this statement. They still are satisfied that a cough is a disease and not a symptom, that the disease is a weakness or affection of the lungs, that a stethoscope is a fad of the rising generation, and that a laryngoscope or nasal speculum is a useless and impertinent innovation.

Now what has struck me as so peculiar is this, and it may be observed in every physician's out-patient room or consulting-room in the kingdom. Given a patient complaining of cough and discomfort referable to the upper respiratory tract the physician percusses the chest and listens for abnormal sounds; he may, or he may not, find evidence of trouble sufficient to account for the cough. His examination ends here. I say that under both conditions he should examine the larynx, nasal chambers, and ear if he

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[1] Abstract of a paper read before the West Kent Medico-Chirurgical Society on Dec. 3rd, 1897.

wishes to arrive at a correct diagnosis and treat his patient efficiently.

Let me illustrate my meaning. Suppose the physician discovers bronchial catarrh or bronchitis. This is certainly sufficient to account for the cough, but bronchial catarrh and bronchitis are not diseases unto themselves, they are in the great majority of cases symptoms of something else, and that something else is unphysiological inspiration. To illustrate this condition of things I could quote you cases by the yard. One, however, will suffice.

CASE 3.—The wife of a well known London consultant was wont to suffer from chronic bronchitis and winter cough for many years necessitating a prolonged stay in the South of France during the winter months. At my suggestion the nasal chambers were examined. Complete anterior nasal obstruction was present on both sides from very enlarged lower turbinal bodies. Deep fossæ were present on both sides of the nasal septum, indicating the degree of nocturnal obstruction. The galvano cautery restored to this lady the physiological functions of her nose, which enabled her to pass the following severe winter in London without a single day's ailment from cough or bronchitis.

Now to neglect an examination of one half of the respiratory tract in cases where cough is a symptom is neither rational nor scientific. Given the whole respiratory tract what portions are liable to be first and more often exposed to irritation and consequent catarrh? Surely not those portions securely encased in thick bony and muscular walls, surrounded by a thick protective covering of fat and skin, and guarded by the ever-wakeful and sensitive straits of the larynx? Would not rather those parts be first affected that are exposed to the vicissitudes of temperature and weather, to noxious gases, to injurious particles of all sorts floating in the air, to the drying and relaxing effects of too little or too much moisture, and to the inroads of the hosts of bacilli that are ever present as resident guests in these parts? I contend it is more likely that these parts will suffer first and more often unless carefully guarded and shielded by the important offices of the nasal chambers.

Now, one word more. The throat, nasal chambers, post-nasal space, and upper larynx are in immediate and direct communication with every cranial nerve coming off from the brain or medulla, as well as the whole of the upper cervical nerves and the sympathetic. Now, with this wide and extensive nerve connexion you will not be surprised to hear that affections of the nasal chambers involving a suspense or curtailment of its physiological functions might and does affect and involve parts most distant. I will enumerate a few from my note-book and from the works of others.

A patient who had suffered from aphonia for two years was shown at a meeting of this society. Anterior nasal obstruction was found and the obstruction was removed. There was complete return of voice in fourteen days. There was not the smallest evidence of hysteria in this case. Strong faradaic currents had produced no effect.

Cases of headache from nasal obstruction are one of the commonest troubles one meets with and are a constant association of nasal obstruction.

I have shown here and published many cases of severe trigeminal neuralgia due to nasal disease which were, moreover, completely cured by removing the nasal troubles.

Cases of chorea are reported by Elsberg and others, as Bosworth and Sallinger, and cases of epilepsy by a score of authorities, all of which were cured permanently by attending to the nasal troubles.

Sallinger, Lennox Browne and others report cases of enuresis as a reflex symptom of nasal disease, and North goes so far as to state that he has never met with a case of neurasthenia without some nasal stenosis or catarrh. With this statement I cordially agree. Affections of the tonsils and post-nasal space in children are always accompanied with dyspepsia, marasmus, and neurasthenia. I would go as far as to state that dyspepsia is a constant accompaniment of chronic nasal stenosis.

Ocular troubles are, according to American authorities, frequently caused by, and associated with, nasal hyperæmia and obstruction. Gruening mentions photophobia and conjunctivitis. Beverley Robinson does the same. Cheatham mentions asthenopia. B. Bettmann, of Chicago, mentions six cases of epiphora, conjunctivitis, photophobia, and pain about the eyes and due to nasal disease.

Harley-street, W.

THE VACCINATION PROBLEM: A CONTRIBUTION TO ITS SOLUTION.[1]

BY FRANCIS T. BOND, B.A., M.D. LOND., F.R.S. EDIN.,
HONORARY SECRETARY TO THE JENNER SOCIETY.

(Concluded from p. 1583.)

A POSSIBLE DISADVANTAGE.

IT may perhaps be urged that any attempt by magistrates in courts of petty sessions acting under different conditions in different parts of the country to discriminate between objectors who have and who have not sufficient grounds for objecting to obey the prescriptions of the vaccination law might lead to undesirable variety of decisions. It must be admitted that there is some ground for this contention. But we may fairly hope that the good sense of the magistracy as a whole, acting as it will do in the light of public opinion, will allow of the practice of the courts in this matter gradually crystallising into a form which will at least prevent the perpetration of serious injustice or the exercise of unreasonable severity and will thereby remove most of the justification for complaint which at present exists.

There are some other advantages incidental to the course of procedure above advocated to which it is desirable to refer.

THE STATE'S GUARDIANSH[illegible] CHILD WOULD BE

The proposal of th[illegible]esent form would practically [illegible]t by the State of its contr[illegible]n. As has been above [illegible]trary in the report, i[illegible]arent had once sig[illegible] to vaccination v[illegible]' to vaccination t[illegible]ose the recalcitra[illegible]fter the statutory [illegible]s to see reason for [illegible]con- tinue to be exe[illegible]en to objection is to g[illegible]g the child's vaccinat[illegible] of the vaccination autho[illegible]ny time thereafter on showi[illegible]g, as, for example, the occurren[illegible]ll-pox or the death of the objecting pa[illegible]tion of the right thus to summon would serve to show that the State had not renounced its responsibility for the protection of the child and would enable the vaccination authority to apply for the enforcement of the law in case, for instance, of an outbreak of small-pox which threatened danger to the child. Moreover, the principle of suspension is recognised at present though only on medical grounds and there would therefore be no novelty in extending it.

By making it necessary that a parent, the vaccination of whose child has been suspended, should again obtain an order for exemption on its reaching the school age we should largely relieve ourselves of difficulty with that class of parents upon whom the Commissioners specially animadvert, the indifferent and the negligent. A parent who had obtained exemption during infancy of his child but who had ceased to feel strongly on the matter would not be likely to trouble himself at the prospect of his child being vaccinated at school. The proceeding would be a part of the school routine and the great majority of those who were not actively opposed to their children being protected would be as indifferent to their being treated as the rest of their schoolmates as were the great mass of parents who do not themselves read the Bible very sedulously to their children being taught to do so. The average Briton is very accommodating in this respect and easily falls into whatever may be the fashion. It may be fairly assumed that it would be only the most obstinate dissentients who would be likely to lodge an objection. For one reason or another a considerable portion of the children to whose vaccination during infancy objection had been formally made would probably be found by the authorised vaccinator on visiting the school free

[1] Abstract of a paper read before the Sanitary Congress at Leeds on Sept. 15th, 1897.

from any such embargo and he would be entitled to invest them with a protection against which no special *caveat* had been lodged. Whilst we should still have a remnant of unvaccinated children remaining in our schools from four years upwards it would, by one means or another, have been reduced to a minimum, without need for recourse to those stringent proceedings by which martyrs are at present manufactured and a persistent agitation against vaccination maintained.

EXTENSION OF THE VACCINATION AGE.

But there is another influence affecting materially the existing opposition to infant vaccination which has to be considered. The present English law requires that the infant shall be vaccinated within three months of birth. The Scotch law extends the period to six months, and the Commissioners recommend that the period be similarly extended in this country. But in Germany, which is in all probability the best vaccinated country in the world, the child need not be vaccinated until the end of the year after that in which he was born. Thus in the case of a child born on Jan. 1st, 1897, the law does not compel him to be vaccinated until Dec. 31st, 1898. When we come to inquire into the explanation of this much longer extension of the period of exemption from compulsory vaccination than obtains in this country we find it in the facts that the longer the period of extension the less are the risks and trouble involved and that directly the German child arrives at the school age he comes under the compulsory control of the public vaccinator if he has not been previously efficiently vaccinated. Germany, therefore, is in a position to disregard the moderate risk which the ordinary child runs of being attacked by small-pox in a fairly well-vaccinated community, within a period of at most two years from birth, in the assurance that at five years of age the whole of the juvenile flock will be brought within the fold of protection if, as is not infrequently the case, from laxity or other cause, any portion of it has not been vaccinated within the period specified for so doing by the law. Under the arrangement which has been suggested we might not be able to feel the satisfaction that our children were quite so effectually protected as those of Germany are, but we should at any rate have approached within a much nearer distance of it than we could hope to do if the recommendation of the Commissioners were legalised in its present unconditional form.

In regard to extending the period of exemption there is this important advantage—that we should lessen greatly the risk of complicating vaccination with those troubles which are incidental to the early period of infancy and would thus relieve it of a serious source of opprobrium.

OBJECTION TO EXTENSION OF THE VACCINATION AGE.

The chief objection raised to this extension of the vaccination age has been that we often lose touch with the child himself in consequence of the migration of the parents from the locality in which he was born to some other in which his vaccinal condition cannot be easily ascertained. This was a serious ground of objection in the days before compulsory school attendance and would be so still to any extension of the vaccination age if no relation were established between vaccination and school life. But if directly the child arrives at the school age he comes again in touch with the vaccination authority we have the less need to trouble ourselves about his having escaped from the purview of the vaccination officer in the period immediately succeeding birth.

But there is another objection to which it is necessary to refer. It may not unreasonably be asked to what extent would the interests of this residue of unvaccinated children as well as of the community at large be affected by their existence in it? It must be admitted that a large number of unvaccinated children in any community is a source of real danger in case of a serious outbreak of small-pox. The epidemic at Gloucester conclusively proves this. But the proportion of unvaccinated children in Gloucester at the commencement of the epidemic—the accumulation of ten years of complete neglect by the local authority to enforce the Vaccination Acts—would not be likely to be found in any place in which the law operated in the way above suggested. Moreover, the extent to which the unvaccinated children were attacked in the earlier part of the Gloucester epidemic was in some respects due to the delay which occurred in providing facilities for vaccination owing to a conflict of local authorities in regard to their respective duties in this matter, which it is to be hoped early legislation will render impossible in any future outbreak of the kind. In presence of an epidemic of small-pox all but the comparatively few parents who are "stalwarts" in their opposition to vaccination are ready to have their children vaccinated. That the not very large number of children who might reach the school age and the still smaller number who would pass beyond it unvaccinated under the proposed system would incur some risk of catching small-pox themselves and of thereby diffusing it amongst other persons cannot be denied. But we should in this respect be in no worse position than we are now in regard to them, for they form a portion only of a much larger ill-vaccinated residuum which we have with us as it is and which there is reason to think would be very materially reduced by the adoption of the course suggested.

So far as the ordinary chances of infection are concerned an infant is much less exposed to them than older persons are. In fact, as the experience of most, if not all, modern outbreaks shows, it is the adults who have been vaccinated in infancy and who have not renewed their protection by re-vaccination who supply the bulk of the attacks. In pre-vaccination times it was otherwise. Then the infant portion of the population contributed the majority of the cases of every outbreak, for the adults were mostly protected by having had small-pox. But now with our well-organised sanitary machinery for at once detecting a case of small-pox, and with the facilities which it is hoped the amended law will provide for effective isolation, for rapid vaccination and re-vaccination on the occurrence of an outbreak, and for preventing the introduction of infection into the schools, we may reasonably expect that the risk of the accumulation of any large number of unvaccinated children and of their consequent attack by small-pox as occurred at Gloucester will be small.

INSURANCE OF RE-VACCINATION BY THIS PLAN.

But perhaps the most important advantage of identifying vaccination with the school period of early life is not only that it facilitates the vaccination of the child, if he has not been efficiently vaccinated previously, but because before the child, leaves school he will have arrived at an age when it is expedient to re-vaccinate him. It is this recognition of vaccination as an essential incident of school life that offers the key to the solution of the most serious complications of the vaccination problem in this country, for it removes the difficulties, which are otherwise insuperable, in the way of maintaining not only an efficient system of primary vaccination, but also of effecting what is quite as essential if we are to avoid the epidemics of small-pox which have become increasingly frequent of late years, the establishment of re-vaccination on an equally solid foundation.

RE-VACCINATION AN ESSENTIAL ELEMENT OF A NATIONAL SYSTEM.

A national system of vaccination which only protects children and exposes the adolescent and adult, in whom the protection conferred upon them in infancy has been gradually weakened, to the risk of catching small-pox, even though it may be only in a modified form, is so imperfect that it is difficult to feel much enthusiasm in its favour. Jenner and those who lived in the early part of the century had good reason for cherishing the belief that a single vaccination protected for life. But Jenner himself was disillusioned on this point before his death and the obligation which facts imposed upon him of recognising that the protective influence of even a typically good vaccination was not absolute and ineradicable was, no doubt, a severe blow to the enthusiastic hopes which he had honestly entertained and led others to cherish on the subject. There is, however, not only no room for misconception now on this point; there is every need for making re-vaccination a prominent feature of any system that has any claims to be considered a national one. The importance of so doing has been repeatedly insisted on by all the highest authorities on the subject. Unfortunately such advice must be regarded as purely academic in its character unless it can be shown how it is practicable to carry it into effect. A very little consideration will convince that in the case of those who have passed beyond the school age it is not possible to establish anything like a system of general re-vaccination such as that which we can maintain in the case of primary vaccination. We may, it is true, secure, as we do at present, through the influence of the State as the great employer of labour, the re-vaccination of important sections of the community such as the army, navy, police, and postal services; but, after all, these classes represent numerically but a small portion of the whole adult

wishes to arrive at a correct diagnosis and treat his patient efficiently.

Let me illustrate my meaning. Suppose the physician discovers bronchial catarrh or bronchitis. This is certainly sufficient to account for the cough, but bronchial catarrh and bronchitis are not diseases unto themselves, they are in the great majority of cases symptoms of something else, and that something else is unphysiological inspiration. To illustrate this condition of things I could quote you cases by the yard. One, however, will suffice.

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I have shown here and published many cases of severe trigeminal neuralgia due to nasal disease which were, moreover, completely cured by removing the nasal troubles.

Cases of chorea are reported by Elsberg and others, as Bosworth and Sallinger, and cases of epilepsy by a score of authorities, all of which were cured permanently by attending to the nasal troubles.

Sallinger, Lennox Browne and others report cases of enuresis as a reflex symptom of nasal disease, and North goes so far as to state that he has never met with a case of neurasthenia without some nasal stenosis or catarrh. With this statement I cordially agree. Affections of the tonsils and post-nasal space in children are always accompanied with dyspepsia, marasmus, and neurasthenia. I would go as far as to state that dyspepsia is a constant accompaniment of chronic nasal stenosis.

Ocular troubles are, according to American authorities, frequently caused by, and associated with, nasal hyperæmia and obstruction. Gruening mentions photophobia and conjunctivitis. Beverley Robinson does the same. Cheatham mentions asthenopia. B. Bettmann, of Chicago, mentions six cases of epiphora, conjunctivitis, photophobia, and pain about the eyes and due to nasal disease.

Harley-street, W.

THE VACCINATION PROBLEM: A CONTRIBUTION TO ITS SOLUTION.[1]

BY FRANCIS T. BOND, B.A., M.D. LOND., F.R.S. EDIN.,
HONORARY SECRETARY TO THE JENNER SOCIETY.

(Concluded from p. 1583.)

A POSSIBLE DISADVANTAGE.

IT may perhaps be urged that any attempt by magistrates in courts of petty sessions acting under different conditions in different parts of the country to discriminate between objectors who have and who have not sufficient grounds for objecting to obey the prescriptions of the vaccination law might lead to undesirable variety of decisions. It must be admitted that there is some ground for this contention. But we may fairly hope that the good sense of the magistracy as a whole, acting as it will do in the light of public opinion, will allow of the practice of the courts in this matter gradually crystallising into a form which will at least prevent the perpetration of serious injustice or the exercise of unreasonable severity and will thereby remove most of the justification for complaint which at present exists.

There are some other advantages incidental to the course of procedure above advocated to which it is desirable to refer.

THE STATE'S GUARDIANSHIP OF THE CHILD WOULD BE MAINTAINED.

The proposal of the Royal Commissioners in its present form would practically involve the complete abandonment by the State of its control of the child in regard to vaccination. As has been above remarked, for all that appears to the contrary in the report, it might be claimed that a child whose parent had once signed a statutory declaration of objection to vaccination would be thereby exempted from liability to vaccination thereafter. Is there any reason for this? Suppose the recalcitrant parent were to die, say, within a month after the statutory exemption of the child; or suppose he were to see reason for ceasing to object; why should the child continue to be exempt? The simpler course and that least open to objection is to give the magistrate the power of suspending the child's vaccination with the reservation of the right of the vaccination authority to apply for a summons at any time thereafter on showing sufficient cause for so doing, as, for example, the occurrence of an outbreak of small-pox or the death of the objecting parent. The reservation of the right thus to summon would serve to show that the State had not renounced its responsibility for the protection of the child and would enable the vaccination authority to apply for the enforcement of the law in case, for instance, of an outbreak of small-pox which threatened danger to the child. Moreover, the principle of suspension is recognised at present though only on medical grounds and there would therefore be no novelty in extending it.

By making it necessary that a parent, the vaccination of whose child has been suspended, should again obtain an order for exemption on its reaching the school age we should largely relieve ourselves of difficulty with that class of parents upon whom the Commissioners specially animadvert, the indifferent and the negligent. A parent who had obtained exemption during infancy of his child but who had ceased to feel strongly on the matter would not be likely to trouble himself at the prospect of his child being vaccinated at school. The proceeding would be a part of the school routine and the great majority of those who were not actively opposed to their children being protected would be as indifferent to their being treated as the rest of their schoolmates as were the great mass of parents who do not themselves read the Bible very sedulously to their children being taught to do so. The average Briton is very accommodating in this respect and easily falls into whatever may be the fashion. It may be fairly assumed that it would be only the most obstinate dissentients who would be likely to lodge an objection. For one reason or another a considerable portion of the children to whose vaccination during infancy objection had been formally made would probably be found by the authorised vaccinator on visiting the school free

[1] Abstract of a paper read before the Sanitary Congress at Leeds on Sept. 15th, 1897.

from any such embargo and he would be entitled to invest them with a protection against which no special *caveat* had been lodged. Whilst we should still have a remnant of unvaccinated children remaining in our schools from four years upwards it would, by one means or another, have been reduced to a minimum, without need for recourse to those stringent proceedings by which martyrs are at present manufactured and a persistent agitation against vaccination maintained.

EXTENSION OF THE VACCINATION AGE.

But there is another influence affecting materially the existing opposition to infant vaccination which has to be considered. The present English law requires that the infant shall be vaccinated within three months of birth. The Scotch law extends the period to six months, and the Commissioners recommend that the period be similarly extended in this country. But in Germany, which is in all probability the best vaccinated country in the world, the child need not be vaccinated until the end of the year after that in which he was born. Thus in the case of a child born on Jan. 1st, 1897, the law does not compel him to be vaccinated until Dec. 31st, 1898. When we come to inquire into the explanation of this much longer extension of the period of exemption from compulsory vaccination than obtains in this country we find it in the facts that the longer the period of extension the less are the risks and trouble involved and that directly the German child arrives at the school age he comes under the compulsory control of the public vaccinator if he has not been previously efficiently vaccinated. Germany, therefore, is in a position to disregard the moderate risk which the ordinary child runs of being attacked by small-pox in a fairly well-vaccinated community, within a period of at most two years from birth, in the assurance that at five years of age the whole of the juvenile flock will be brought within the fold of protection if, as is not infrequently the case, from laxity or other cause, any portion of it has not been vaccinated within the period specified for so doing by the law. Under the arrangement which has been suggested we might not be able to feel the satisfaction that our children were quite so effectually protected as those of Germany are, but we should at any rate have approached within a much nearer distance of it than we could hope to do if the recommendation of the Commissioners were legalised in its present unconditional form.

In regard to extending the period of exemption there is this important advantage—that we should lessen greatly the risk of complicating vaccination with those troubles which are incidental to the early period of infancy and would thus relieve it of a serious source of opprobrium.

OBJECTION TO EXTENSION OF THE VACCINATION AGE.

The chief objection raised to this extension of the vaccination age has been that we often lose touch with the child himself in consequence of the migration of the parents from the locality in which he was born to some other in which his vaccinal condition cannot be easily ascertained. This was a serious ground of objection in the days before compulsory school attendance and would be so still to any extension of the vaccination age if no relation were established between vaccination and school life. But if directly the child arrives at the school age he comes again in touch with the vaccination authority we have the less need to trouble ourselves about his having escaped from the purview of the vaccination officer in the period immediately succeeding birth.

But there is another objection to which it is necessary to refer. It may not unreasonably be asked to what extent would the interests of this residue of unvaccinated children as well as of the community at large be affected by their existence in it? It must be admitted that a large number of unvaccinated children in any community is a source of real danger in case of a serious outbreak of small-pox. The epidemic at Gloucester conclusively proves this. But the proportion of unvaccinated children in Gloucester at the commencement of the epidemic—the accumulation of ten years of complete neglect by the local authority to enforce the Vaccination Acts—would not be likely to be found in any place in which the law operated in the way above suggested. Moreover, the extent to which the unvaccinated children were attacked in the earlier part of the Gloucester epidemic was in some respects due to the delay which occurred in providing facilities for vaccination owing to a conflict of local authorities in regard to their respective duties in this matter, which it is to be hoped early legislation will render impossible in any future outbreak of the kind. In presence of an epidemic of small-pox all but the comparatively few parents who are "stalwarts" in their opposition to vaccination are ready to have their children vaccinated. That the not very large number of children who might reach the school age and the still smaller number who would pass beyond it unvaccinated under the proposed system would incur some risk of catching small-pox themselves and of thereby diffusing it amongst other persons cannot be denied. But we should in this respect be in no worse position than we are now in regard to them, for they form a portion only of a much larger ill-vaccinated residuum which we have with us as it is and which there is reason to think would be very materially reduced by the adoption of the course suggested.

So far as the ordinary chances of infection are concerned an infant is much less exposed to them than older persons are. In fact, as the experience of most, if not all, modern outbreaks shows, it is the adults who have been vaccinated in infancy and who have not renewed their protection by re-vaccination who supply the bulk of the attacks. In pre-vaccination times it was otherwise. Then the infant portion of the population contributed the majority of the cases of every outbreak, for the adults were mostly protected by having had small-pox. But now with our well-organised sanitary machinery for at once detecting a case of small-pox, and with the facilities which it is hoped the amended law will provide for effective isolation, for rapid vaccination and re-vaccination on the occurrence of an outbreak, and for preventing the introduction of infection into the schools, we may resonably expect that the risk of the accumulation of any large number of unvaccinated children and of their consequent attack by small-pox as occurred at Gloucester will be small.

INSURANCE OF RE-VACCINATION BY THIS PLAN.

But perhaps the most important advantage of identifying vaccination with the school period of early life is not only that it facilitates the vaccination of the child, if he has not been efficiently vaccinated previously, but because before the child, leaves school he will have arrived at an age when it is expedient to re-vaccinate him. It is this recognition of vaccination as an essential incident of school life that offers the key to the solution of the most serious complications of the vaccination problem in this country, for it removes the difficulties, which are otherwise insuperable, in the way of maintaining not only an efficient system of primary vaccination, but also of effecting what is quite as essential if we are to avoid the epidemics of small-pox which have become increasingly frequent of late years, the establishment of re-vaccination on an equally solid foundation.

RE-VACCINATION AN ESSENTIAL ELEMENT OF A NATIONAL SYSTEM.

A national system of vaccination which only protects children and exposes the adolescent and adult, in whom the protection conferred upon them in infancy has been gradually weakened, to the risk of catching small-pox, even though it may be only in a modified form, is so imperfect that it is difficult to feel much enthusiasm in its favour. Jenner and those who lived in the early part of the century had good reason for cherishing the belief that a single vaccination protected for life. But Jenner himself was disillusioned on this point before his death and the obligation which facts imposed upon him of recognising that the protective influence of even a typically good vaccination was not absolute and ineradicable was, no doubt, a severe blow to the enthusiastic hopes which he had honestly entertained and led others to cherish on the subject. There is, however, not only no room for misconception now on this point; there is every need for making re-vaccination a prominent feature of any system that has any claims to be considered a national one. The importance of so doing has been repeatedly insisted on by all the highest authorities on the subject. Unfortunately such advice must be regarded as purely academic in its character unless it can be shown how it is practicable to carry it into effect. A very little consideration will convince that in the case of those who have passed beyond the school age it is not possible to establish anything like a system of general re-vaccination such as that which we can maintain in the case of primary vaccination. We may, it is true, secure, as we do at present, through the influence of the State as the great employer of labour, the re-vaccination of important sections of the community such as the army, navy, police, and postal services; but, after all, these classes represent numerically but a small portion of the whole adult

population and mainly include the male sex only. Something might, no doubt, be done to impress upon private employers the importance of making re-vaccination a condition of service, but in the face of the increasing difficulties of the labour question it is to be feared that any advice which the State might tender in this direction would be looked on rather as a counsel of perfection than as an embodiment of actual duty. Under these circumstances, therefore, the adoption of re-vaccination as an incident of school life and the logical complement of vaccination under the same conditions presents itself as the only solution of the vaccination problem in regard to re-vaccination, which is simple, practicable, and effective. That it is so is proved by the experience of Germany. And although the label "Made in Germany" is not one that commends itself in ordinary commercial transactions the success which has attended the German vaccination system is such as to show that it is the outcome of a well-considered and practicable scheme. Nor has this scheme been forced upon the country, as is sometimes represented, by a bureaucratic Government; it has been adopted by the national Parliament as the result of the lesson taught to the whole of Germany by the experience of the epidemic of small-pox in 1870–72. It was the experience of Frankfort in escaping epidemic small-pox when flooded with French prisoners suffering from it during the Franco-German war owing to the general vaccination and re-vaccination of its citizens which opened the eyes of Germany to the necessity of making re-vaccination a feature of her national system of protection. It is to be hoped that the result of the similar experience of Gloucester during its recent great epidemic may teach a similar lesson to the people and Parliament of Great Britain. Should it do so the citizens of Gloucester will have some compensation for the price which they have had to pay for buying this experience. It is not to be supposed that the proposal to graft vaccination and re-vaccination on to our national system of education will not meet with a certain amount of opposition. Those who object to vaccination under any conditions will, of course, oppose it energetically. Even the zealous educationalist who may have no antipathy to vaccination itself will possibly in some cases resent the introduction into the curriculum of school-life of what he may consider another disturbing element. But it may fairly be assumed that the great mass of intelligent persons when they can be made to see, as the German nation has done, that there is really no practicable alternative between this course and the abandonment of anything like a national system of protection against so dreaded a disease as small-pox will acquiesce in the necessity for adopting it. It is well to bear in mind in connexion with the re-vaccination of children in public elementary schools that children of about twelve years of age are in a stage of transition, physically, intellectually, and socially. They are not only in some respects putting on a new physique but are about to pass from the influence and control of their parents to a stage of life when they will be in a large degree their own masters and when they will not be so amenable to advice on matters that are somewhat out of their grasp as they are before leaving school.

If at the time when the end of his school life was approaching the child were to receive some information in the shape of readable literature showing the history of small-pox and vaccination and the reason why the adoption of the latter is expedient for the general good it is very probable not only that any feeling of repugnance to the operation, if such should by any means have been previously excited in the child's mind, would be allayed, but that the child himself might as the result of intelligent conviction become a useful aid in strengthening both at the time and in after years the convictions of others.

We have in this way at our hand an invaluable opportunity for influencing the rising generation and it will be extremely foolish if we throw it away. Even where through parental prejudice the child may have escaped vaccination in early life he might probably at this stage be brought within the fold of protection. Whether this course be adopted or not it is eminently desirable that more effort should be made than has been hitherto done both by the Government and by associated enterprise to diffuse information as to the evidence in favour of vaccination. If it be thought to be the duty of the State to advise much more to enforce a practice which is particularly open to misrepresentation, as vaccination unquestionably is, it is surely also a duty to spare no effort to protect the public against the misconceptions to which they are thus exposed. Why, for instance, should not every parent who receives a notice of the requirements of the law in regard to the vaccination of his child be furnished at the same time with an intelligible statement of the reasons why the law imposes this obligation upon him?

[Concerning the inequality of the present vaccination laws Dr. Bond said:] That grievances exist in connexion with vaccination procedure at present it is impossible to deny. It is more than a grievance it is a scandal that the law does not press equally upon the poor and upon the rich. The rich dissentient can contract himself out of vaccination by the payment of a fine which to the poor man may mean the breaking up of his household or imprisonment. The rich dissentient need not even appear personally in court; he can fee a lawyer to attend on his behalf. The poor man must either go himself or send his wife or run the risk of being dealt with as contumacious. The rich mother can have her child vaccinated at home, the poor one has to take hers to a public station often at a distance of some miles and through rain or snow. The rich mother can persuade a complaisant medical man to vaccinate her child with only one mark and to certify, as he legally can do, that the child has been "successfully" vaccinated. The poor man's child has to be vaccinated in four places, for which he is not thankful, as he ought to be, and which the mother resents as a grievance, as it truly is, if all children are equal before the law. If there is one thing more than another that is indispensable in any new legislation on this subject it is that all citizens, rich and poor alike, shall be treated with absolute impartiality. We cannot afford to have the benefits of vaccination whittled away by the exasperating effect of unjust social distinctions.

At any rate, during the interregnum which must necessarily continue until the Government can decide on what course they will adopt in regard to legislation on this matter the enforcement of serious and repeated penalties is much to be deprecated. It is little less than a public scandal that by one bench of magistrates a defaulter should be mulcted in a nominal fine whilst by another, which in many cases sits in the very same court, the penalty inflicted may be so heavy that to a labouring man it may necessitate its liquidation either by distress on his goods or imprisonment. Such anomalies are wholly indefensible. They bring the law into disrepute and injure the cause of vaccination itself.

There are other subjects of importance connected with the report of the Royal Commission and with the legislation which must follow on it which invite discussion, such as the questions to what authority is the administration of vaccination to be in future entrusted? Is it expedient that every medical practitioner shall be recognised as a public vaccinator? How can the certificates of vaccination and of deaths from small-pox be improved so as to make them more trustworthy records than they are at present? And how are sanitary authorities to be induced to make adequate provision for isolating small-pox and other infectious diseases as the Commissioners advise? These questions, however, though of much importance in connexion with the reorganisation of vaccination administration are subordinate to the fundamental problem which has been discussed here; they involve technical considerations which cannot be adequately dealt with in this place, and they are much less open to contention than the question whether an efficient national system of vaccination is to be maintained or not. What such a system can do when it is effectually established and maintained can be learned by studying its effects during the last twenty years in Gemany where we have an object-lesson as unimpeachable and convincing of the results to be expected from carrying the vaccination of a nation out thoroughly as the experience of Gloucester has afforded of those of its local neglect.

DONATIONS TO SWANSEA CHARITIES.—A sum of £4000 has recently reached the Swansea charities through the Guesdon bequest. Sir R. Webster, after consulting with Sir J. D. T. Llewelyn, has allocated £2000 to the Swansea Hospital, £1000 to the Deaf and Dumb Institution, and £500 each to the Blind Institution and the Orphans' Home.

SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Sir Squire Bancroft will give his reading of the "Christmas Carol" to which have been added some passages from "The Chimes" at the Coöperative Hall, Plymouth, on Jan. 26th, in aid of the South Devon and East Cornwall Hospital, Plymouth. The Earl of Morley will preside.

THE GUAIACOL TREATMENT OF LARYNGEAL TUBERCULOSIS ESPECIALLY BY SUBMUCOUS INJECTIONS.

BY JAMES DONELAN, M.B. R.U.I.,
PHYSICIAN TO THE ITALIAN HOSPITAL, LONDON.

THE indisputably good results from the local use of lactic acid in the treatment of laryngeal tuberculosis have caused that drug to be looked on almost as a specific in this form of the disease. There is, however, some reason to fear that its proved superiority to a multitude of remedies has tended somewhat to exclude from trial drugs generally admitted to do good in tuberculosis affecting other portions of the respiratory system. Amongst these creosote probably stands in the front rank, especially in the form known as guaiacol.

Some years ago I was associated with the late Sir Morell Mackenzie in a series of trials of creosote as a local agent in laryngeal tuberculosis by means of sprays and applications with the cotton-wool holder and some good results were obtained in cases of superficial ulceration. A hypodermic syringe with a long curved handle was also used for submucous injections, but the difficulty at that time in obtaining a sufficiently pure form of the drug, and more especially the excellent results that continued to follow the use of lactic acid by Krause, Heryng and others, caused these experiments to be abandoned. My attention was again called to this mode of treatment by the publication two years ago of a number of cases of laryngeal phthisis treated successfully by submucous injections of guaiacol by Dr. W. F. Chappell, of New York,[1] who has also invented a special syringe for the purpose. Since that time I have had the opportunity of administering guaiacol in this manner in seven cases, six in which there were marked pulmonary complications and one in which the disease so far appears to be primary. The results have been uniformly satisfactory as regards the local affection. The method pursued was that suggested by Dr. Chappell[2] with some slight modifications in individual cases. Treatment commenced by thoroughly cleansing the larynx at least once a day by means of antiseptic sprays and especially by a mixture of guaiacol in paroleine or castor oil with or without the addition of menthol. The effect of these applications was to reduce œdema and in the case of newly-formed superficial ulcers to heal them. The larynx was then cocainised, the needle of the submucous syringe guided by the laryngeal mirror inserted in the desired site, and the dose, usually one minim, of pure guaiacol injected beneath the mucous membrane in the floor of an ulcer or into the most prominent part of an infiltration. The local reaction was always slight and easily controlled by rest and sucking ice. On one occasion a patient who had no previous or subsequent hæmoptysis used his voice rather loudly shortly after the injection was made and coughed up small quantities of blood for about half an hour afterwards, but this was the only instance of bleeding following the use of the needle. In no case, however, did any serious inconvenience, much less danger, follow the treatment. The injections were continued at intervals of a week and in two cases for part of the time every four days. In one of these there was a very obstinate ulcer in the inter-arytenoid fold which had resisted all previous treatment by curetting and lactic acid. So great was the dysphagia that the patient though hungry had such a dread of every form of food that rectal alimentation had to be used. After one week's treatment with the guaiacol spray and two injections of one minim of guaiacol in the floor of the ulcer the dysphagia practically disappeared and the ulcer completely healed shortly afterwards. I am indebted to Sir Felix Semon for the opportunity of testing this treatment in another case with somewhat similar history in which an equally good local result was obtained and though the patient subsequently succumbed to pulmonary complications the ulcer did not recur.

[1] Journal of Laryngology, 1895, p. 355.
[2] Loc. cit.

It is in the speedy relief of the dysphagia that the good results of this treatment are most manifest and in this respect it is far superior to lactic acid which especially when associated with the curette usually temporarily aggravates this distressing symptom. It is not suggested here that spraying and injecting guaiacol for a few weeks is enough to cure every case of laryngeal tuberculosis. There are, however, many cases in which the pulmonary lesions are slight and stationary and in which much may be hoped from the "self-limiting" character of the disease if the vital force is not too far reduced by persistent cough and dysphagia. These are the cases in which the best results are to be hoped from the guaiacol treatment. To be of any use, however, it must be perseveringly carried out and

where ulceration is at all firmly established the larynx should be carefully cleansed with the spray at least once a day. These measures, which do not require any special skill, will often be found to heal even well-established ulcers. The injections will be found a powerful auxiliary in the case of considerable infiltration or extensive ulceration. They do not appear to be contra-indicated by the presence of even a considerable amount of œdema, as in my experience the œdema was certainly not increased and generally somewhat diminished shortly after the injections were commenced. The diminished blood-supply and consequent lowered vitality of the affected parts may account for the absence of serious local reaction.

As it was found that the original adapted hypodermic syringe was unsatisfactory through want of rigidity and especially through the influence of the guaiacol on the piston leathers I designed the syringe shown on a reduced scale in the accompanying illustration. It is made entirely of steel and is therefore completely sterilisable. It consists of a barrel mounted on a modified pistol handle, a long steel tube with a rectangular laryngeal curve at the end of which is a thread coarse enough to safely carry the different nozzles. These are three in number and vary in length according to the depth in the larynx at which it is desired to inject. Each nozzle ends in a smoothly rounded shoulder which prevents the needle penetrating too far. The needle projects a quarter of an inch from the shoulder, that being found to be the depth necessary to ensure retention of the fluid. The special feature of the syringe is that it introduces for the first time, I think, the application of the plunger pump to these instruments. Instead of a piston rod and leathers there is a steel plunger graduated in minims and fitting the barrel with sufficient accuracy to ensure the propulsion of fluids. The syringe is filled by withdrawing the plunger and pouring pure guaiacol into the barrel until it fills it and begins to drip from the needle. The plunger is then replaced and pressed in until only the dose required is left in the barrel. The needle having been inserted in the mucous membrane the plunger is pressed home quickly with the thumb. The needle should, if possible, be retained *in situ* for a second or two to ensure retention of the fluid. I should add that the design has been very well carried out by Messrs. Allen and Hanburys, who are now making these instruments.

Upper Wimpole street, W

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WEST LONDON HOSPITAL.

A CASE OF "ANTITOXIN FEVER."

(Under the care of Dr. SEYMOUR TAYLOR.)

IN numerous instances after the injection of diphtheria antitoxin rashes have been observed, chiefly erythematous and urticarial in nature; pain and effusion in the joints have also been noticed in many cases, and in these points the interesting case described below is not unlike the results of an antitoxin injection, but at least a week seems to have elapsed between the injection and the first appearance of the symptoms and this fact cannot but throw some doubt on a causal connexion between the two. For the notes of this case we are indebted to Dr. Henry J. Davis, late house physician.

Whilst nursing a case of tracheotomy the patient, aged twenty-four years, contracted a mild faucial attack of diphtheria. She was admitted to the West London Hospital under the care of Dr. Seymour Taylor on Sept. 10th, having been previously indisposed for five days with sore throat and general malaise. The uvula was pendulous and œdematous, the tonsils were red and swollen, and their inner surfaces were covered with a white, glistening membrane which extended on to the left palatal arch; some adenitis was present. Cultivation showed the presence of diphtheria bacilli. 20 c.c. of antitoxin from the British Institute of Preventive Medicine were injected in the loin and twenty-four hours later 10 c.c. were injected in the buttock. Beyond some local pain following the lumbar subcutaneous injection no constitutional disturbance followed. The membrane rapidly disappeared, leaving some follicular distension which cleared on the third day. The temperature remained normal for seven days and the patient appeared to be making a rapid recovery. The adenitis had quite subsided by Sept. 15th. On the 18th there was some elevation of temperature coincidently with enlargement and tenderness of the infracondylar and cervical glands. The tonsils, especially the right, again became swollen and two days later a well-marked scarlatiniform rash appeared on the buttocks, thighs, and legs together with tenderness and effusion in all the principal joints. Constitutional disturbance was now considerable. There were headache, fever, drowsiness, nausea, and severe pains in the joints, back, and limbs. A papular rash appeared on the face and neck and with the fading of the erythematous rash a raised, blotchy, serpiginous eruption broke out on the trunk. The rash itched considerably. The effusion in the joints increased, the knees and ankles being exquisitely tender. The joint pains were relieved by salicylates, phenacetin, and bromides, the knees, elbows, and ankles being painted with equal parts of the liniments of aconite, belladonna, and chloroform and wrapped in cotton-wool. On the 23rd the rash had quite faded and the temperature was normal; all the symptoms rapidly disappeared, the patient made an uninterrupted recovery, and left the hospital for home on Oct. 16th. There was no albumin in the urine, peeling, cardiac complication, or paralysis throughout the illness.

Remarks by Dr. DAVIS.—The sudden onset with tonsillitis, adenitis, headache, rash, and joint pain suggested at one time the possibility of scarlet fever and acute rheumatism, but with the disappearance of the rash all the symptoms rapidly subsided. The antitoxin was obtained fresh from the Institute.

Medical Societies.

HUNTERIAN SOCIETY.

Exhibition of Cases and Specimens.

A CLINICAL meeting of this society was held at the London Institution on Dec. 8th, the President, Dr. G. E. HERMAN, being in the chair.

Dr. APPLEFORD showed a man, aged forty-nine years, who was the subject of a Curious Deformity of the Right Hand. The thumb and first finger were remarkable for their size, the latter being 5¾ in. in length and tuberculated. The second finger at the age of seven years had been removed on account of its bulk. The hand was a very useful one.

Dr. ARTHUR DAVIES showed a woman, aged twenty-six years, who had been treated seven years ago by Koch's Tuberculin, since which time the physical signs of phthisis had remained practically stationary. Owing to a contracting cavity at the left base the heart had been drawn into the post-axillary region.

Mr. POLAND exhibited a rare case of Acute Rachitic Curvature of the Tibia Backwards (just before the anterior tubercle) upon which he had performed osteotomy with success. The patient, a girl aged seventeen years, had fairly severe rickets from infancy, the ends of the long bones being still bulky and the femora much curved. The bend at the upper end of each tibia was at the lower level of the tubercle and presented an appearance not unlike dislocation of the knee. The rest of the bone in each limb appeared quite normal. At this point the operation was performed. The right tibia and fibula were carefully and gradually divided and their diaphyses forcibly bent backwards (bringing them into a straight line with their upper epiphyses) and the limb was placed on a double inclined plane. Firm consolidation took place readily in the corrected position. Radiographs of the left leg and knee were shown as illustrating the contrast between the two limbs.

Dr. KELSON showed a Rhinolith removed from a woman, aged sixty-two years, who had suffered from foul-smelling breath and some fœtid discharges from the nose. The rhinolith was easily removed and all the symptoms ceased.

Mr. A. H. TUBBY showed a case of Syphilitic Curvature of both Tibiæ. The patient, a girl, aged twelve years, with a history of snuffles and a rash about two weeks after birth, was a stunted child of pallid and syphilitic aspect. The legs were remarkably curved forwards, which condition, existing since four years of age, had been gradually getting worse. The tibiæ were longer than the femora and were very tender, much hypertrophied, with rounded crests and uneven sides; their curve was entirely anterior, not lateral, thus being in distinct contrast to rachitic curvature. The condition was osteoporotic, similar to that found in Parrot's nodes. The teeth were not pegged or notched, but the palate was very highly arched.

Mr. COTMAN exhibited a boy, aged twelve years, who for about six months had had a persistent ring of erythema round his mouth caused by sucking his lips during and on waking from sleep. Remedies applied and watching him for a few nights effected a cure, but the trouble invariably returned as soon as these were discontinued.

Remarks on these cases were made by the PRESIDENT, Mr. TREGELLES FOX, and Mr. LAMPLOUGH.

BRITISH GYNÆCOLOGICAL SOCIETY.

Hæmorrhagic Endometritis.—Exhibition of Specimens.

A MEETING of this society was held on Dec. 9th, Dr. GRANVILLE BANTOCK, the Vice-President, being in the chair.

Dr. J. A. SHAW-MACKENZIE read an adjourned paper on Hæmorrhagic Endometritis. In pointing out the difficulties of differential diagnosis between chronic inflammatory conditions of the endometrium and commencing adeno-carcinoma in curetted fragments he exhibited and contrasted microscopic sections of the same. He showed two uteri with microscopic sections removed by Dr. Bantock and

Mr. Skene Keith for continuous and severe bleeding rebellious to usual medication and repeated curetting in women at the menopause. In both hæmorrhage had endangered life and both since the operation—four years in the first case and nine months in the second—were in good health. He associated these cases with the case of the late Sir Spencer Wells and Dr. Sims Woodhead's pathological report published in 1893[1] in which the patient had died after hysterectomy from exhaustion consequent on intractable hæmorrhage which previous curetting and removal of the tubes had failed to check. He exhibited the uterus which the late Sir Spencer Wells had later kindly given to him and pointed out that the microscopic sections were the same as in Dr. Bantock's and Mr. Skene Keith's cases. He considered the term hæmorrhagic endometritis clinically expressed bleeding from the uterus from various enumerated general and local causes while the microscopic appearances of the endometrium were those of chronic inflammation of different degrees. He considered menorrhagia in many cases was due to gonorrhœa and unsuspected syphilis usually associated with ovarian and tubal disease in single women, especially in parous women after abortion and delivery with sub-involution of uterus and also in young adult women the subject of inherited syphilis several cases of which, including sisters, were at the present time under his care. He briefly referred to the clinical and microscopical differentiation between epithelioma, adeno-carcinoma, and syphilitic disease of the cervix and os uteri.

Dr. MACNAUGHTON JONES observed that the subject was one of great importance as it involved questions of both diagnosis and treatment. As to diagnosis the clinical features taken alone were sometimes ambiguous; whilst the evidence supplied by the microscope was often conflicting. Many years ago he published a section of a case of hæmorrhagic endometritis, in which the ultimate ending of the case showed it to be one of sarcoma. A great many different conditions had been described under the name "hæmorrhagic endometritis," which was not a very scientific term. In one such case where the patient had profuse hæmorrhage a small raspberry-like projection was found in the uterus which was reported on by the pathologist as being malignant; yet the patient was at present alive and well. He then related two cases on which he had recently operated, one a woman aged twenty-four years and the other a woman aged thirty-two years. Both were treated by dilatation, curetting, and swabbing out of the uterine cavity with chromic acid. When hæmorrhage persisted in spite of treatment hysterectomy was the only resource.

Dr. CLEMENT GODSON said that he first saw, five years ago, the patient mentioned by Dr. Shaw-Mackenzie as having been operated on by Mr. Keith. When he saw her again at Mr. Keith's request he was much struck by the change in her appearance; she looked as if another flooding must prove fatal. He entirely concurred in the treatment adopted—hysterectomy.

Dr. HERBERT SNOW agreed with what had been said as to the variability of pathologists' reports. Each one had his own views and methods, and even the terms employed were vague. Carcinoma of the body of the uterus resulted from proliferation of the utricular glands which first became branched, then ulceration took place and all trace of tubular arrangement was lost. But this disease was at first encapsuled and tended to spread towards the free surface, he therefore thought that if taken early enough a free scraping might be effective in curing the cancer. The fact that there was no return was no proof that it was not malignant.

Dr. F. EDGE thought that in performing hysterectomy for these conditions they were often in danger of going too far, for the hæmorrhage might be due to constitutional conditions, and it was a question whether they might not sometimes be removing an organ that was suffering but not to blame. Taking 100 cases of hæmorrhage lasting some years were they justified in doing hysterectomy in every case because in ten of them malignant disease developed? It was possible that even in these ten the malignant change might have been averted by earlier treatment, for cancer was largely due to continued irritation. He thought that to advise hysterectomy for hæmorrhagic endometritis was to open the door of surgical intervention much wider than some of them would intend.

Dr. C. H. F. ROUTH doubted if the diagnosis of these cases was any more advanced now than it was thirty years ago. Three competent men might see a case and diagnose it respectively as carcinoma, sarcoma, and benign disease. They must look to other guides than the microscope; and the chief thing was to take the *tout ensemble* of the patient and not to confine their attention to the uterus. Of local conditions the two most important indications of cancer were induration and enlargement of glands and fixation of the uterus.

Dr. GRANVILLE BANTOCK admitted that he also had very little confidence in the microscope—cases pronounced to be malignant lived for years, and *vice versâ*. He had only seen three cases in which he thought it necessary to remove the uterus for hæmorrhage. The first was a married woman, aged twenty-seven years, who had had numerous curettings done. On dilating the uterus he removed a table-spoonful of softened endometrium; and when he had removed the uterus, there was a further tea-spoonful of the same material. She was now quite well. The other two patients had passed the menopause; one died twelve months later apparently from cancer of the liver; the other was alive and well. Dr. Shaw-Mackenzie attributed the origin of the disease in many cases to syphilis; he thought that if this were so they would meet with the condition much more often than was the case.

Dr. SHAW-MACKENZIE briefly replied.

Dr. R. D. PUREFOY (Dublin) showed the following specimens: (1) A Myoma of the Uterus removed by Panhysterectomy; (2) a Myoma of the Uterus removed by Myomectomy; (3) Ruptured Tubal Gestation coincident with Uterine Pregnancy; (4) a Fibroid Uterus removed by Morcellement; and (5) a Dermoid Cyst removed by Vaginal Colpotomy.

Dr. F. EDGE (Wolverhampton) showed (1) a Myomatous Uterus removed by Panhysterectomy; and (2) a Double Hydrosalpinx.

Mr. O'CALLAGHAN showed (1) A Cancer of the Uterus removed by Vaginal Hysterectomy; and (2) a Double Pyosalpinx.

[1] Brit. Med. Jour., Feb. 25th, 1893.

LIVERPOOL MEDICAL INSTITUTION.

Chloroform in Removal of Tonsils.—Cleft Palate and Hare-lip Operations.—Pneumothorax.—Traumatic Cyst of the Iris.

A MEETING of this society was held on Dec. 16th, Dr. RICHARD CATON, President, being in the chair.

Dr. PERMEWAN read a note upon the Use of Chloroform in Removal of Tonsils. He considered it to be dangerous and unwarrantable to use chloroform for the removal of tonsils. He felt convinced that in the large majority of cases the use of any anæsthetic was quite unnecessary and in the few remaining cases when an anæsthetic might be advisable he strongly recommended the use of nitrous oxide. The disadvantages of an anæsthetic were considerable both to the patient and the operator; these disadvantages were fully considered under the following heads: (1) the risk of general anæsthesia itself; (2) blood in the trachea; (3) shrinking of the tonsils under an anæsthetic; (4) the recumbent position not convenient; and (5) the tongue apt to get in the way. After consideration of the various advantages and disadvantages Dr. Permewan strongly recommended the removal of tonsils without any anæsthetic.—Mr. RAWDON had removed a number of tonsils from both children and adults, the latter sometimes under chloroform, especially when post-nasal adenoids were removed at the same time. He had had no anxiety with the anæsthetic; he took special care that the patients were under but not deeply under the chloroform.—Mr. BARK could not understand anyone using chloroform for the removal of tonsils only; enlarged tonsils in young children were almost invariably accompanied by post-nasal growths and it was more important to remove these than the tonsils.—Mr. FINGLAND deprecated the practice of administering chloroform to patients in the upright position.—Dr. HUNT, Dr. CARTER, Mr. HOLLAND, Dr. O'HAGAN, Dr. RAW, Mr. BURNS GEMMELL, Mr. MURRAY, Mr. LARKIN, and Mr. NEWBOLT also took part in the discussion.—Dr. PERMEWAN replied.

Mr. R. W. MURRAY brought forward some children upon whom he had operated for Cleft Palate and Hare-lip. He urged the importance of closing the cleft palate before the child had learned to talk. In several cases where this had been done the children, speaking quite naturally, were shown to the society.

Dr. BUSHBY read some short notes on five cases of Pneumothorax which had come under his notice during the last twelve months. The first case was one of tuberculous disease of the lung in which the pneumothorax was recovered from without effusion of fluid. The second was a case of hydro-pneumothorax of long-standing which came under notice a few weeks before death. The third was a case of pneumothorax arising in a strong, healthy man without evidence or history of tuberculous disease. The condition in this case was completely recovered from without effusion of fluid. The fourth case originated in a left-sided pneumonia passing into gangrene which broke down into the pleural cavity. At the necropsy the husk of a grain of wheat was found in the gangrenous patch. In this case the patient himself had ascribed his illness to the inhalation of dust from grain. The fifth case was in a man whose left lung was almost destroyed by tuberculous disease. Death resulted from the rupture of a vessel in a small cavity in the apex of the right lung which was otherwise not diseased.

Mr. SHEARS showed a man, aged thirty-five years, suffering from a Traumatic Implantation Cyst of the Iris.

BIRKENHEAD MEDICAL SOCIETY.

Operation for Subluxation of the Knee-joint.—Death from Uræmic Convulsions following Parturition.—Anti-Streptococcic Serum in Post partum Peritonitis and Septicæmia.—Bicornate Uterus.—Rigid Os with Complications.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Dec. 10th, Dr. R. S. MARSDEN, President, being in the chair.

Mr. A. H. BUTCHER showed a man and read the following notes of an operation he had performed in order to fix the knee-joint in a case of Subluxation. He said that there were certain cases not very frequent which come before surgeons for alleviation and which were not referred to in the ordinary works on surgery and this was his excuse for making a few remarks on the cause and result of an operation he had performed at the man's express desire so that he might be able to follow his employment with greater confidence and safety. The case was one of constantly recurring subluxation due to extreme laxity of the joint structures, so much so that the man could subluxate his joint at will. The result of this laxity was instability, so that the following of his employment as a dock labourer was attended with considerable risk, for when any extra strain was put upon the joint it gave way and the man would fall. He was under treatment at the Borough Hospital and various methods were tried in the hope of causing some contraction of the surrounding structures of the joint; knee-caps, caustics, &c., were used, but without success. An operation was performed in the hope of anchoring the patella in position, but this also failed; the patient then migrated elsewhere where excision was suggested, but to this he would not agree on account of the inevitable shortening. The man returned to him (Mr. Butcher) in the hope that he might be able to give him a stiff knee, as he declared that a stiff knee would be more useful to him than the knee in its then lax condition. This Mr. Butcher agreed to do and operated in the following manner. A slightly incurved incision was made across the front of the joint from the back portion of the internal to the back portion of the external condyle of the femur, dividing all the structures down to the bone and cutting through the ligamentum patellæ, which was turned up, the joint was forcibly flexed, the lateral ligaments were divided together with the crucial ligaments, which were quite healthy, and the joint was brought well into view. With a sharp gouge the semilunar cartilages were removed and the condyles of the femur were thoroughly denuded of all the articular cartilage, taking care to remove the portions well back and also the patellar portion in front; then the tibia was treated in the same manner with the exception that the tuberosities were slightly gouged out so as to make a cup-shaped surface into which to place the convex femur. The cartilage surface of the patella was next removed and the ligamentum patellæ sutured. The femur was now placed into the hollowed out tibia and the whole limb placed on a McIntyre splint. The bones were now secured in position by two ivory pegs about four inches long, one being driven through the external condyle of the femur into the internal tuberosity of the tibia and the other from the internal to the external. A few strands of silkworm gut were left in one corner of the wound, the rest being drawn into perfect apposition and the whole covered with sulphocyanide gauze and wool. At the end of twenty-four hours the wound was dressed and at no time did the temperature rise above 101° F. The limb was placed in plaster-of-Paris at the end of four weeks and a week later the patient was discharged. The plaster was removed in nine weeks from the date of the operation and he was now able to go about without support and with a limb practically no shorter than its fellow, for on very careful measurement one-eighth of an inch could scarcely be detected. Mr. Butcher was of opinion that the result was far preferable to any that could have been attained by the ordinary method of excision, where the patient would have had a couple of inches shortening and would have been obliged to wear a special boot. It is not often that one is called upon to operate on a perfectly healthy joint in order to procure fixation, but for diseased joints the matter is different, for there are then removed not only cartilage and synovial membrane but almost invariably certain portions of diseased bone.

Dr. W. FLOYD read notes (1) of a case of Death after Parturition from Uræmic Convulsions; and (2) Post-partum Peritonitis and Septicæmia in which the Anti-streptococcic Serum had been used.

Mr. WILKINSON read notes (1) of a case of Bicornate Uterus; and (2) a case of Rigid Os where the vertex of the fœtus was bound down by adhesions to the lower zone of the uterus.

In the discussions which ensued on the various cases shown the PRESIDENT, Dr. F. JOHNSTON, Mr. WILKINSON, Dr. GIBSON, Dr. BRIEN, and Dr. W. FLOYD took part.

Dr. STANSFIELD exhibited (1) a case of Hemianæsthesia affecting the right side of the body; and (2) a man suffering from a Tumour of the Ethmoid Bone most probably of a sarcomatous nature.

Dr. W. FLOYD showed an Acephalic Fœtus.

Dr. STANSFIELD showed a large Meningocele.

Dr. CARDEN PEARSON showed (1) a pair of Contracted Kidneys; and (2) a Perforated Ulcer of the Colon.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Suppurative Middle-ear Disease.

A MEETING of this section was held on Nov. 12th, Sir WILLIAM THOMSON, the President, being in the chair.

Mr. ROBERT H. WOODS read a paper on a case of Suppurative Middle-ear Disease complicated by lateral sinus thrombosis, extra-dural cerebellar abscess, and temporo-sphenoidal abscess. The patient, a man, aged twenty-seven years, was admitted to the Hardwicke Hospital suffering from symptoms of typhoid fever. He had had chronic otorrhœa for seven years, the discharge ceasing seven days before admission. Lateral sinus thrombosis was diagnosed and an operation performed. The mastoid antrum was opened and cleared out and the bony meatus extended back to the groove from the lateral sinus, in which a septic thrombus was found. An extra-dural abscess on the posterior aspect of the temporal bone was evacuated. Two days later, symptoms of brain abscess persisting, a second operation was undertaken with the result that a temporo-sphenoidal abscess was tapped and four drachms of pus were removed. The patient made an uninterrupted recovery.

The PRESIDENT congratulated Mr. Woods on the result which had attended his operation. Such cases, so far, had not always been so satisfactory.

Mr. M'ARDLE said that he had seen Mr. Woods use the mallet and gouge and he himself preferred the gouge. There was a great difficulty in guiding the electric burr.

Mr. FITZGIBBON said that the question as to the use of the gouge or the use of a burr or the use of a trephine must depend to a great extent on what is found after the incision.

Several other members having spoken Mr. WOODS said, in reply, that in these cases there was the greatest difficulty in getting through the bone because there was a sclerosing osteitis set up which eburnated the mastoid process and made it exceedingly difficult to get through and it was in these cases that the burr was so useful. It was not at all

probable that concussion of the brain could be caused by blows of the mallet on a chisel.

SECTION OF PATHOLOGY.

Exhibition of Specimens.

A MEETING of this section was held on Dec. 3rd, Dr. J. M. PURSER, President, being in the chair.

Mr. A. H. BENSON showed an Eye in which a splinter of iron had been embedded for fourteen years.

Mr. WERNER gave details of (1) Sarcoma of the Choroid; (2) Glioma of the Retina; and (3) Myxo-Sarcoma of the Lacrymal Gland.

Dr. MCWEENEY showed two Hydatid Cysts, one from the lower lobe of the left lung and the other from behind the right lobe of the liver.

Dr. J. B. COLEMAN exhibited two specimens of Hearts illustrating infective endocarditis and villous pericarditis respectively.

Reviews and Notices of Books.

John Hunter: Man of Science and Surgeon, 1728–93. By STEPHEN PAGET. London: T. Fisher Unwin. 1897. Pp 272. Price 3*s.* 6*d.* Vol. I. of "Masters of Medicine": Edited by ERNEST HART, D.C.L.

THIS work promises well for the success of the "Masters of Medicine" series, for the sketch of John Hunter which is so admirably given by Mr. Stephen Paget should be as much appreciated by the public as by the profession. Partial views of Hunter's work and character have been presented to us in many Hunterian orations, but it is from this book that we learn in a short compass the completeness of the man. As Sir James Paget says in an interesting preface, Hunter was a born "collector of everything" and "he studied his collection in its widest range and thus became as no one in his time was—a comparative anatomist and a pathologist, and he brought the knowledge of all he acquired into union with his knowledge of medical and surgical practice. He was a scientific observer rather than a thinker and insisted that all thinking should be patiently and carefully tested by experiment and observation and thus brought from the domain of "general principles" into that of fact so that it could then be safely used for further guidance. His advice to Jenner is the keystone of his whole life: "Don't think—try; be patient, be accurate."

John Hunter came of a very old Scotch family, probably of Norman origin—the Hunters of Hunterston, in Ayrshire, whose history goes back to the thirteenth century. The Hunters of Long Calderwood, in Lanarkshire, were a younger branch of this family. Long Calderwood is a small estate seven miles from Glasgow and one mile north of the village of East Kilbride. John Hunter was born here, according to the parish register, on Feb. 13th, 1728, being the last of the ten children of his father, John Hunter. Curiously enough he always celebrated his birthday as on the 14th and this is the day on which the Hunterian Oration is annually delivered at the Royal College of Surgeons of England. Most of his brothers and sisters died comparatively early in life, William, Dorothea, and John being the only ones who lived beyond the prime of life. Dorothea married the Rev. James Baillie, the minister of Hamilton, near Kilbride, and was the mother of Matthew Baillie, the great physician, of "the immortal Joanna," to quote Sir Walter Scott, and of Agnes who lived over 100 years.

William Hunter, ten years older than John, went with a bursary to Glasgow College, afterwards assisted Cullen in a country practice, then attended Alexander Monro's lectures at Edinburgh in 1740, in 1741 came to London, and in 1748 followed Samuel Sharpe in Covent-garden as a lecturer on operative surgery to which he added a course of anatomical lectures. In 1748 John Hunter, then twenty years of age, joined his brother in London. His early life is brought before the reader in this exquisite passage: "Throughout his boyhood he was good at such games as the village afforded to boys and observant of nature, but deficient in self-control, idle, and ignorant, a great disgrace for a Scots boy living within walking distance of Glasgow College, whose father was a gentleman, whose brothers were studying law and medicine." He afterwards said of himself: "When I was a boy I wanted to know all about the clouds and the grasses and why the leaves changed colour in the autumn; I watched the ants, bees, birds, tadpoles, and caddie-worms; I pestered people with questions about what nobody knew or cared anything about." He hated his school-books, nor did he see the good of learning even at Oxford in the couple of months that he wasted there long after boyhood was over. "They wanted to make an old woman of me, or that I should stuff Latin and Greek at the University; but these schemes I cracked like so many vermin as they came before me."

The brothers, William and John, began work together in September, 1748, but their portraits distinctly show their differences in appearance and temperament. William Hunter was a fine gentleman, well dressed and carefully posed. His hands were delicate, his features were regular and remarkably handsome, his mouth was thin and very sensitive, and his whole look was sharpened and restless. In striking contrast is John in his working dress, a loose dissecting apron with long sleeves; the cuffs turned back, the garment caught round him with a single button; attitude clumsy, as if in a hurry to be gone; features lacking fineness, but the whole face and figure full of indomitable strength. For the three next winters he was working at anatomy from the "rising to the setting of the sun" and became demonstrator to his brother. In the summer sessions he enjoyed company, went to theatres, hobnobbed with resurrection men, and followed Cheselden's practice at the Chelsea Hospital. In 1751 he became a surgeon's pupil at St. Bartholomew's Hospital under Percival Pott; in 1754 he entered at St. George's Hospital, and in the next year spent two months at Oxford. At this time the brothers were almost equal in the school John lecturing if William were absent, and this work necessitated his resigning the house-surgeoncy at St. George's Hospital after holding it for only five months. It was now when he was twenty-nine years of age that human anatomy was taking a place in his mind as being only a part of all anatomy, and he began to institute an inquiry into the various organisations by which the functions of life are performed that he might thereby acquire some knowledge of general principles. In 1759 he was threatened with phthisis; in October he was appointed staff surgeon in the army and he was at the capture of Belleisle and also served in Spain, and on this experience is founded the last chapters of his great "Treatise on the Blood, Inflammation, and Gunshot Wounds."

In 1762 peace was declared and in 1763 John Hunter started practice in Golden-square as a surgeon. William Hunter was now in the zenith of his fame working hard at the school, at his hospital appointments, at his large private practice, as well as at literary work and in defending his brother's discoveries in anatomy. In the controversies between them and Percival Pott on congenital hernia and the Monros on other anatomical points it is needless now to enter. As Mr. Paget says, the controversies were fierce after the fashion of the time—William irritable and suspicious, John obdurate and conscious of his strength, and neither of them permitting the least infringement of his rights. William Hunter died in 1784, but in 1780 John Hunter communicated to the Royal Society that remarkable and astounding paper on the Structure of the Placenta which

was a direct challenge of his brother's knowledge. Estrangement necessarily followed and although John attended to his brother as a surgeon when William was dying from paralysis no reconciliation took place. "He did not make his brother his executor and left nothing to him, neither money nor the care of the museum nor the old home at Long Calderwood."

John Hunter started practice in Golden-square at the age of thirty-five years, and lived to the age of sixty-five years. His beginning did not suggest a great success. "He had no hospital appointment; he had already lived twelve years in London, but in all that time had not published one word of writing." "He had not the art of making patients." To the profession he was known as a good anatomist subordinate to his brother; to the people around Golden-square he was a zealous student of the human body who might or might not restore you to health but would certainly anatomise you after death. To himself practice was subordinated to anatomy and pathology and every possible moment was devoted to scientific work and to adding to his museum. He now began to study living animals both by experiment and by observation of their habits and in 1764 bought a small house and two acres of land at Earl's-court, then at some little distance from London. He made it a farm, a menagerie, an institute of anatomy and physiology, and a villa decorated in the fashion of the period. Dr. Merriman, aided by Frank Buckland, gives us a most life-like picture of Hunter's life and surroundings at that period. At the east end of the grounds was an artificial mound of earth having an opening in its side which led into three small vaults beneath it. This mound was the "lion's den"; here he kept such animals as were most dangerous. In a field facing his sitting-room was a pond where he kept his fishes, frogs, leeches, eels, and river-mussels, and it is said the pond was ornamented with the skulls of animals. He kept fowls, ducks, geese, pigeons, rabbits, pigs, and made experiments on them. Also, opossums, hedgehogs, and rare animals—a jackal, a zebra, an ostrich, buffaloes, even leopards; also dormice, bats, snakes, and birds of prey. In the conservatory were several hives of bees, and the wall-fruit in the garden was their sole property. Here he prepared the skeleton of the Irish giant Byrne or O'Brien. His treatment of his own case of a fractured tendo Achillis was marked by his originality of idea as to causation and his bold line of treatment. In 1767 he was elected a Fellow of the Royal Society and in 1768 one of the surgeons to St. George's Hospital. He was now able to take "house pupils" and among them the famous Dr. Edward Jenner to whom a large number of letters showing their good fellowship were written by Hunter and one may be given here as a typical specimen. It shows most characteristically the born investigator and collector.

"DEAR JENNER,—I received your salmon, and very fresh, and just examined enough to want another, but will wait until another season. If I was to have another it should be one that had just spawned; I will take a cock salmon when you please. If you catch any bats let me have some of them, and those you try yourself observe the heat, observe the fluidity of the blood. Do all this in a cold place. See if you can catch the number of pulsations and breathing in a bat without torture. If the frost is hard see what vegetables freeze; bore holes in large trees and see whether the sap runs out, which will show it is not frozen. I am afraid you have not a proper thermometer. I will send you one.

"Your very much obliged servant,

"J. HUNTER."

The thermometer was a small one, like the present clinical thermometer. Within the years 1768-74 he was made a member of the Corporation of Surgeons, was married to Miss Anne Home, and published the first part of his "Treatise on the Natural History of the Human Teeth." In 1768 John Hunter took over his brother's house in Jermyn-street and he then came into prominence as a leading metropolitan surgeon. In 1773 he suffered from his first attack of angina pectoris and we have a most graphic account of his sensations and the thoughts that passed through his mind during this attack. He remained free from further attacks until 1776 and even after that he had long intervals of freedom, but at last he came to be in pain every day. In 1773 he gave his first course on the principles of surgery at St. George's Hospital, although the giving of lectures was particularly unpleasant to him and he never gave the first lecture of his course without taking thirty drops of laudanum to take off the effects of his uneasiness. He read his manuscript, and the principles of surgery were to him not questions of practice but embryology, physiology, and animal chemistry, the properties of matter, the vital principle, the life of the blood. Ottley's sketch of his daily life at this period is full of interest. "He could do with only five hours of sleep. He was in the dissecting-room from six till nine, when he breakfasted; he then saw patients at home until twelve, when he set forth on his rounds, returning to dinner at four. He was a very moderate eater and drank no wine during many of the latter years of his life. He then slept for about an hour, and the evening was spent in preparing or delivering lectures, in dictating to an amanuensis (Mr. Wm. Bell) the records of particular cases, or in committing to paper the substance of any work on which he chanced to be engaged. At twelve the family went to bed, but Hunter worked on until one or two in the morning or even later in winter. He had no home amusements (no cards) for the relaxation of his mind and the only indulgence he enjoyed consisted in an evening's ramble amongst the various denizens of earth and air which he had congregated at Earl's-court." Such was the daily routine of the man who knew that he might die at any moment from angina pectoris.

In 1776 he was appointed Surgeon Extraordinary to the King and in 1777 he had a severe illness apparently of an epileptiform character. On recovery he went to Bath; but he could not stay away from London and work for more than three months. Notwithstanding his large practice, his appointments, and his reputation John Hunter could not save money. He was always adding to his museum and spent £70,000 on it and he died scarcely able to pay his debts. In 1783 John Hunter's lease of the house in Jermyn-street came to an end and so he bought the twenty-four years' lease of a large house in Leicester-square, the ground behind it, and a house in Castle-street, now part of Charing Cross-road. It was a ruinous bargain and he spent £6000 on vast premises that would not sell for half that money. He kept a costly establishment for he liked things done in grand style. William Clift, his museum attendant and amanuensis, has well described the lavishness of his establishment consisting of at least forty-nine persons in Leicester-square, in Castle-street, and at Earl's-court, together with outdoor tradesmen in nearly constant employ. In 1792 he would keep Clift writing while he dictated from seven to eleven at night, "and sometimes an hour or two later." Such was the indomitable energy of John Hunter even late in his life and when enfeebled by ill-health. In 1785 (December) Hunter performed for the first time the operation for aneurysm which will always be associated with his name and marks the zenith of his surgical fame—tying the main artery high up above the disease and allowing the collateral circulation to nourish the parts beyond the ligature. As is well said by Mr. Stephen Paget this operation, which has saved thousands of limbs and lives, was the result of work in many fields of thought; in it he united a whole multitude of facts from anatomy, physiology, clinical experience, post-mortem examinations, and experiments on animals; it remains one of the best deductions ever made in surgical practice." From 1788 there was constant war

between Hunter and his colleagues at St. George's Hospital which was the more embittered by the selection of Keate as surgeon over Everard Home, Hunter's nephew. In March, 1793, a special Court of Governors was summoned to consider a question as to fees which had led to a fierce altercation and was decided against Hunter, and on Oct. 16th, on the occasion of another dispute at the board, he was flatly contradicted by one of his colleagues. Then came the end, angina seized him, he went a few steps, groaned, and fell into Dr. Robertson's arms and died.

A strikingly dramatic end to a remarkable life. We have endeavoured to give our readers a meagre sketch of John Hunter as he lived and worked and we cannot too strongly recommend a perusal of the book itself. Hunterian orations have again and again pointed out the scientific value of his researches and writings and the grand museum of the Royal College of Surgeons of England will ever remain as a monument of his variety of interest and indefatigable industry. The history of his collection after his death and the account of the destruction of his MSS. by Sir Everard Home as given by Mr. Clift in 1834 when he gave evidence before the Parliamentary Committee on medical education are well known to the profession and an abstract of this evidence we published on July 11th, 1835. Mr. Stephen Paget cannot be too highly congratulated on the literary skill which he has shown in giving this most readable sketch of Hunter to the public and the profession, and to Mr. Fisher Unwin the thanks of the readers will be given for the excellent manner in which the book has been printed and published.

Annual of the Universal Medical Sciences and Analytical Index. 1896. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by CHARLES E. SAJOUS, M.D. Paris, and 70 Associate Editors assisted by over 200 Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Vol I., pp. xvi. and 691; Vol. II., pp. 590; Vol. III., pp. 721; Vol. IV., pp. 611; and Vol. V., pp. 685.

WORKS of reference such as this are not merely useful, they are absolutely necessary. Year by year the area covered by the medical sciences grows wider and the number of facts accumulating daily becomes greater and greater; it is impossible for any individual member of the medical professon to make himself acquainted with the material contained in even a tithe of the professional journals and yet it is essential that every medical man who would keep up with the onward progress of knowledge should be acquainted with all the important advances of the sciences of medicine and surgery. The work cannot be done by each man for himself; it needs extensive arrangements and elaborate collaboration to put together into one work all the important new facts, new methods, and new remedies which have become available during the past year. Since 1888 Sajous' Annual has appeared regularly; each year has seen introduced such improvements as experience has shown are desirable and practicable, so that it comes to pass that to-day we have such a work as that which now lies before us in which can be found with ease any and every addition of importance to our knowledge. To authors the value of the book is great, but perhaps it is the general practitioner who will appreciate most this wonderful work of reference.

A very convenient system of paging is employed. Each volume is divided into sections distinguished by the letters of the alphabet; in the edition of every year the same sections are devoted to the same subjects so that anyone who wishes to look up any disease—for instance, diabetes—knows that he will find what he wants in Volume I., Section F, without needing to refer to the index. Each section is paged separately and this also facilitates reference. The contents of each volume are given on the back of the cover, so that the subject required can be found easily. The references quoted in the articles are distinguished by numbers and at the end of each volume is a list of the works quoted from in numerical order. Altogether 1214 journals and 170 books, monographs, and theses are laid under contribution. As to the accuracy of these references we can speak from an extensive experience with former issues of the work; they are surprisingly accurate considering the very extensive range of the subjects dealt with and the enormous number of the quotations; only very occasionally have we met with an error and even then the error has been slight.

Every year alterations are made, as we have mentioned, in the work and these always have for their aim increased facility of reference. In the present edition of the Annual several important changes have been introduced. In order to increase the usefulness of the abstracts it has been thought advisable to increase their length so as to convey fully the authors' meaning. It has been deemed advisable to re-arrange the entire text in order to obtain a more logical sequence of the subjects discussed and this has been done by the aid of the editor's immediate assistants who prepared the majority of the articles introducing the best work done during the year; each of these articles was then submitted to the associate editor for that subject who erased, changed, or added anything he chose, and further inserted personal comments which are distinguished by his initials. Those comments which are not so distinguished are due to the editor in chief. More than half a million words have been added to this issue and the editor felt that the additions to the vast field of medical knowledge should be presented in a form more easily grasped than is possible in the body of the work; he has therefore prepared and inserted in the fifth volume an "Analytical Index and Cyclopædia of Treatment," in which is given a summary of every practical article quoted in the Annual proper and of all the criticisms introduced by the associate editors. Each subject is sub-divided into sections, with the excerpts arranged in logical sequence, each phase of the disease being dealt with in turn; and when the literature of the year does not cover the subject a brief outline of the treatment of each disease thus overlooked has been introduced. This Analytical Index and Cyclopædia of Treatment occupies only about 350 pages and reference numbers are given at the end of each extract enabling the reader to find easily the further information contained in the body of the work.

Other improvements are to be found in this edition: headings and side-headings are in a heavy black type which is much more striking than the small capitals and italics formerly employed. The number of coloured plates has been increased and they attain a high degree of excellence. Though the work has been much enlarged there has been no increase in the price. Limits of space prevent us from attempting to deal with the substance of the book; the subjects treated are too numerous for any adequate discussion and it would be useless to note any occasional statements with which we may happen to disagree. We hope that future editions will maintain the high standard reached by the present issue.

The Origin of Disease. By ARTHUR V. MEIGS, M.D. Philadelphia and London: J. B. Lippincott Co. 1897. Price 21*s.* net.

THE pathological doctrine or thesis of arterio-capillary fibrosis enunciated by the late Sir William Gull and Dr. H. G. Sutton was the direct outcome of their researches into the morbid anatomy of chronic Bright's disease. They

established the fact, which is now hardly disputed in any quarter, that the renal changes in "granular kidney" are but part and parcel of a more or less universal fibrosis having for its point of departure the periphery of the vascular area. The service rendered by these eminent physicians, both of whom were gifted with the philosophic spirit, has been far-reaching. It has emphasised the point that the morbid changes which characterise chronic disorders are not limited to this or that organ which may during life have exhibited the most evidence of functional derangement; it has also brought pathology into line with physiology by the suggestion that fibrosis is of the nature of senile change—the natural outcome of the wear and tear of the bodily machine—exemplifying the axiom that age is to be told by the state of the tissues and not by years; and it further suggested that the inroads of acute disease may be favoured, and their gravity to a certain extent measured, by the degree to which these unseen conditions prejudicial to the efficient working of the organism are present in the individual attacked. The work before us may be regarded as in the main a demonstration of the minute changes that take place in all organs in the process of fibrosis. It is based on very extensive microscopical examinations and abounds in carefully executed drawings of the appearances observed. As a contribution to morbid histology the book deserves to be appreciated and had the author been content with this—the main portion of his work—there would be little to take exception to. It is, however, in those chapters in which the attempt is made to justify the title—at first sight not very descriptive of the contents of the book—and especially in the arguments adduced respecting intrinsic, as opposed to extrinsic, etiology, that the work fails to impress the reader with the conviction of the author's grasp of the subject. Indeed, the teaching on some points is distinctly retrograde, as if being possessed of the idea that most diseases do arise from intrinsic causes the author has allowed this to sway his judgment. Thus in the chapter that gives the title to the book there is a curious parallel drawn between the tendency of malignant disease to dissemination and that of fibroid degeneration to spread, and it is said that "if it were conceded that malignant disease and fibroid degeneration spread as they do owing to similar causes and that the spreading of fibroid degeneration is not the result of infection it would follow as a necessary corollary that the metastasis of malignant disease cannot be of the nature of an infection" (p. 21). There is in truth great virtue in an "if," but how any pathologist with the facts of lymphatic and blood-vascular metastasis before him can gravely suggest that fibroid degeneration spreads like cancer passes comprehension. The philosophical view of Gull and Sutton as to fibrosis cannot be applied to explain the distribution of malignant growths. Again in dealing with tuberculosis or, rather, with the more restricted field of "pulmonary consumption" Dr. Meigs reverts to the teachings of Niemeyer—and no one can dispute their admirable lucidity or excellence—that tuberculous infection is secondary to caseous inflammatory changes. The arguments that were then possible and cogent have been put out of court since the views of Laennec as to the unity of phthisis have been re-established by the bacillary doctrine. As the author rejects that doctrine it is not surprising to find him asserting that syphilis which produces lesions that ultimately closely resemble those due to tubercle is opposed to the latter in its origin since it—i.e., syphilis—can only "arise in consequence of the introduction into the body of a specific material poison." He affirms also that no advance has been made in our knowledge of the etiology of typhoid fever since Murchison's affirmation of its *de novo* origin; nor does he apparently admit that diphtheria also has been proved to be of specific origin "although," he adds, "most persons at the present time believe it to be caused by a bacillus." We cannot but consider that views of this nature are likely to cause the author to be regarded as somewhat behind the times; yet it would be churlish to withhold recognition of the amount of labour that the production of such a work must have entailed and of the general utility of its main object—namely, the demonstration of the importance of general tissue change as an underlying factor of most diseases.

Sir Ranald Martin. By Sir JOSEPH FAYRER. London: A. D. Innes and Co. Pp. 203. Price 6s.

IN his preface to this biography, Sir Joseph Fayrer remarks that in undertaking the task he was actuated by the feeling that such valuable services as those rendered by Sir Ranald Martin should not be left unrecorded. In some sense the services have not been unrecorded for the materials from which the memoir has been compiled are for the most part collected from official records, the medical journals, and Sir Ranald Martin's published works. We are, however, indebted to the writer of the present volume for having brought vividly before us the life story of a strong man, upright and honourable in every relation—a man of marked and known ability and of unremitting energy.

The period during which Mr. Martin was employed in India extends from 1817 when, at the age of twenty-one years, he arrived at Calcutta after a voyage of nearly six months until 1839 when, owing to failure of health from frequent recurrences of the malarial fever which he had contracted in Gondwana and Burmah combined with the constant strain of unceasing professional work, he was compelled to resign. The history of these twenty-two years is one of almost continuous service of conspicuous utility and of devotion to the interests of the service and of medical and sanitary science. In 1830 he accepted the appointment of Presidency Surgeon. Officers holding this appointment received only a small official salary, but to it were not unfrequently added other Government appointments and the medical practice of Calcutta was mainly in their hands.

In those days the practices of the leading men in Calcutta were very extensive. At that particular time £9000 per year was said to be the greatest amount realised by anyone, but in the Marquis of Wellesley's time as much as £12,000 and £15,000 per annum was said to have been made. In 1839 Mr. Nicholson, who had been the leader of medical practice in Calcutta for some years, was compelled by ill-health to go to the Cape of Good Hope. During his absence which lasted for two years Mr. Martin performed not only his own duties but those of his friend. The labour and strain involved in this work, to which were added a variety of self-imposed public duties, told even upon Mr. Martin's vigorous constitution, and probably hastened that gradual decline of health which ultimately obliged him to the great regret of the public and of his friends to leave India, which he did in 1840. Upon his arrival in England he was received with the most cordial welcome by all grades of the medical profession in London and he established himself in Grosvenor-street. The record of his professional life in London is, however, chiefly remarkable for the interest he continued to display in the welfare of the public service with which he had been so long connected and for which he had done so much. His suggestions and advice were frequently sought by the Government. To Sir Ranald Martin is due the foundation of the great civil hospital in Calcutta which has since become one of the largest clinical schools in the world. It was in the early days of this hospital that he devised and performed the

simple operation for the radical cure of hydrocele by the injection of tincture of iodine.

A subject which he had warmly at heart and on which he was a constant contributor to THE LANCET was the position and claims of the service medical officer, and the "Summary" published in our columns on Sept. 22nd, 1849, was written by him although his name was not given. To him the medical service is indebted for his assiduous and ultimately successful efforts to improve its status and the present biography will on that account alone be read with much interest by members of that service. In it they will find the expression of the views put forward by Sir Ranald Martin (then Mr. Martin) when in May, 1857, he was appointed by the Queen to serve upon a Royal Commission to inquire into the organisation, government, and direction of the Medical Department of Her Majesty's Army. In a memorandum presented to this Commission he said, "The grant of the military division of the Order of the Bath and that of the Victoria Cross to medical officers would appear to settle their status in the army, but their actual position ought not to rest upon chance, or upon the mere occasional circumstance of a decoration. It should be ordered and fixed by a royal ordinance as one of the permanent scientific corps of the army." The position of the service medical man is in some ways better than it was forty years ago, but the Royal Medical Corps yet awaits constitution.

When we remember Sir Joseph Fayrer's own connexion with India, his twenty-four years in the Bengal medical service, his intimate acquaintance with the country, owing to which he was subsequently chosen to accompany the Duke of Edinburgh and at a still later date the Prince of Wales; when we think moreover of his many contributions to our knowledge of medical subjects in connexion with the East, it is an additional satisfaction to receive from his hands the record of a life which he of all men could best understand and appreciate and one to which he is particularly able to do justice.

HOSPITAL ECONOMY.

To the Editors of THE LANCET.

SIRS,—As one who was for several years connected with the out-patient department of a metropolitan hospital, I trust you will allow me a portion of your space in order to discuss the question of hospital management which continues to attract an increasing share of the public attention. Unfortunately we do not yet seem to have come within sight of any practical solution. On the contrary, the din of discord is louder than ever. To look throughout the conflict of opinions for agreement on any point in this controversy is well-nigh futile. If, however, we shall find it anywhere it is in the pretty generally admitted fact of hospital abuse, and this abuse as a rule is in the out-patient department. It is here that pressure upon the funds of charity has been most resented and that the much-debated pay-system has arisen. Here, too, have been witnessed the beginnings of a rational and healthy reform in the selection of applicants for treatment. This brings us at once in contact with the subjects at issue. Congestion of work is really the cause of that decay in funds and that inefficiency from which most, if not all, of our hospitals are suffering. How to relieve this is the first point for practical consideration. I do not of course pretend that hospital poverty is the result solely of expenditure in the out-patients' department. It is in a great degree the consequence of expenses incurred as a natural consequence of the greatly increased cost of treatment within the hospital ward. This cost, however, though doubtless in certain cases open to economical regulation is less controllable and it is certainly less open to challenge on the score of abuse because of the social standing of the patients. The number of beds being necessarily limited there need be little fear, at all events in the larger hospitals, that they will be occupied by undeserving cases. In the out-patient room there is practically no limitation unless it has been deliberately imposed in the interest of economy and professional fair dealing. I confess it would please me to see this practice of restriction carried much further than it now is. I even go so far as to hold that the most satisfactory solution of the problems attributed to hospital abuse will be found not in a merely palliative reform but in an actual reconstruction of the out-patient system. What, I would ask, is the real purpose of a hospital? Is it not the treatment of the poor for those diseases which cannot be treated in their own homes? If it is so then clearly hospitals in our day are made, or allowed, to take upon them far more than their natural duty. In the days of Rahere and even of Guy there was doubtless an absolute necessity for the out-patient clinic. How far otherwise is it now that medical advice of excellent quality may be obtained in half-a-dozen or more of reliable public dispensaries within easy distance of the greater but also relatively poorer institutions? Surely there is no sufficient reason why these lesser foci of medical skill should not be utilised in relieving the stasis of hospital attendance. By such an arrangement which is already in more or less perfect operation in some other parts of the country the pressure of overwork and expense which now fall upon the hospitals would be greatly relieved. Under it the junior members of hospital staffs would, of course, be eligible for dispensary appointments and should have greater facilities than they now possess for following the course and treatment of disease. Students at the hospital schools would not be losers by an arrangement which merely removed to a short walking distance the objects of their clinical study. This method of utilising local dispensaries possesses distinct and peculiar advantages. It does away with the necessity for a paid staff of porters and ward assistants; a resident caretaker paid by the gift of his house rent and a non-resident dispenser engaged at a small salary suffice for all purposes of ordinary service. No imposing suite of rooms is needed. The contributions of charity are at the same time reliable in proportion to the local reputation which invariably attends upon successful treatment. Abuse by comparatively well-to-do persons is more easily checked since the aid of local knowledge is available. For cases which cannot be treated at home the hospital is always open and for such it is really intended. Under the present system it is difficult if not impossible to place any limit upon an ever-increasing expenditure. The recent establishment of a Central Hospital Council is, indeed, a step in the right direction for which we should be thankful. It constitutes at least a reasonable palliative of existing evils. The proposal which I have brought forward has the further advantage of cutting those evils at the root. If radical, however, it is rational also, and I believe that it is equal to the test of practice. I consider therefore that it ought not to lose the opportunity of experimental proof merely because it will necessitate some reorganisation of existing methods which, however capable otherwise, are associated with financial auguries which are certainly not encouraging.

I am, Sirs, yours faithfully,

Dec. 15th, 1897. B. G. MORISON.

MUNICIPAL MATTERS. — Mr. Maurice John Doidge, M.D. Brux., M.R.C.S. Eng., L.S.A., has been elected on the Glastonbury Town Council.—Mr. John McGinn, L.R.C.P. and S.Edin., L.F.P.S.Glasg., has been elected a member of the Newport (Mon.) Corporation.

MEDICAL CLUBS IN SOUTH MANCHESTER.—A meeting of medical men practising in South Manchester was held on Dec. 13th to consider a circular which had been issued inviting persons "of any station in life and of any age from two to sixty years" to join the "Cavendish Provident Clubs for Men, Women, and Children." Mr. Saberton, who presided at the meeting, expressed the opinion that no medical man of respectability would undertake the work of such clubs and said that the only means open to the medical profession for protecting itself against such degrading competition was the formation of a union which would include the younger members.—Dr. Sinclair moved a resolution to the effect that the interference of laymen between patients and medical men is injurious both to the public and to the medical profession.—The motion was seconded by Mr. Stanmore Bishop and carried unanimously.

THE LANCET.

LONDON: SATURDAY, DECEMBER 25, 1897.

THE ANNUS MEDICUS 1897.

Medicine.

IT is obviously impossible to give here anything approaching an adequate review of the progress of medicine during the past twelve months. That task must be left to the able hands of those who contribute to the "annuals" and "Jahresberichten" that will appear at intervals throughout the coming year. Our part is a far humbler one. We endeavour only to direct attention to the general tendency of our art and science—to ascertain what have been the most characteristic lines of advance and what the chief gains. The year has perhaps been more than usually prolific in contributions to medicine. It has been marked by assemblages of congresses and associations in which many burning questions have been discussed. It has also witnessed the output in exceptional number, and in almost every civilised country, of encyclopædic works on medicine for which there must be an insatiable demand. Nevertheless it would be difficult to state precisely in what respects the medicine of to-day is superior to that of the corresponding day of 1896. The advance—such as it is—cannot be measured in this manner, and although in deference to long established custom it is perhaps well to indicate in what direction medical thought and practice are mainly extending it must be left to the future to decide how far the apparent gains are real and substantial. It may, however, be granted that progress is less evident in applied medicine—in what we term the "art of healing"—than in the experimental direction. For some years past we have been accustomed to look for the chief additions to knowledge from the laboratory rather than from the bedside. Clinical observation, aided as it has been by scientific instruments and appliances, is of course not exhausted, but its sphere of novelty is certainly much more restricted than it was when the stethoscope and ophthalmoscope were first placed in the physician's hands. But on the other hand the field open to the laboratory investigator is still of wide extent, the fruits of his labours to practical medicine, although yearly increasing, being yet comparatively limited. Amongst examples of recent work which illustrates progress in this direction may be cited that by HAFFKINE on the bubonic plague, the prevalence of which in Bombay and other parts of India has been the most striking epidemiological fact of the year; the discovery by SANARELLI of the bacillus of yellow fever; the extension given to serum-therapeutics, especially in the use of anti-streptococcic serum in septic diseases and of antitoxin in diphtheria; and the application of the "agglutination test" to the early diagnosis of typhoid fever. The manner of origin and spread of local epidemics and the conditions that favour them have been exemplified only too well in the outbreaks of typhoid fever which have occurred in various parts of this country during the autumn, in the extension of diphtheria in London (probably through school infection), and in the outbreak of beri-beri in the Richmond Asylum, Dublin. The nature of the febrile process has been well discussed by HALE WHITE and has formed the subject of a valuable monograph by LÖWIT; whilst the treatment of fever, especially from the side of the external application of cold rather than that of the internal administration of antipyretic drugs, has been the subject of many contributions, mainly in America. In other directions the gains to knowledge—pathological rather than therapeutical—have been shown in the ever-advancing department of neurology where, as Sir W. GOWERS has shown, the new conceptions arising out of deeper knowledge of the intimate structure of the nervous system bear directly on the interpretation of its disorders. The studies upon aphasia by CHARLTON BASTIAN and BYROM BRAMWELL exemplify the profundity and intricacy of cerebral functions, whilst, too, attention is being daily directed to the phenomena of the so-called "functional" disturbances of the nervous system such as hysteria and neurasthenia. Gout and rheumatism, as of yore, have claimed a no small share of attention. Chronic rheumatic disorders were discussed fully at the Berlin meeting of the Association of Internal Medicine in the spring and again at the Montreal meeting of the British Medical Association, whilst Dr. LUFF'S lectures at the Royal College of Physicians of London dealt with some moot points in the chemical pathology of gout, and a welcome addition to its literature has been made by Dr. W. EWART. Cardiac diseases have also been fully dwelt upon—although there has been a not unwelcome respite from the advocacy of special therapeutic measures that within recent years have rather monopolised attention. The publication of Sir W. BROADBENT'S work is noticeable for the reasonableness and lucidity with which the subject of heart-disease is expounded in it. The subject of tuberculosis has gained a new impetus from the institution of the Weber-Parkes Prize at the Royal College of Physicians of London; and yet, unless we include the "new tuberculin," no material addition has been made to the well-recognised principles of treatment of the local manifestations of this widespread infective disease. Prophylaxis has been urged and in some places carried out with no little rigidity, although the task of attempting to control the prevalence of human tuberculosis under the conditions of life that prevail in overgrown and crowded cities might well appal all but the most sanguine enthusiasts. Gastro-intestinal disorders and their secondary effects afford ample scope for further observation, and we may gratefully recognise the gains to practice which are accruing from the recognition of the part played by the ingesta in determining many of those catarrhal and ulcerative conditions that depend on bacterial agencies. Lastly, note should be taken of the still increasing scope for relief of abdominal affections that are beyond the aid of purely internal medication which is afforded by surgery, as witnessed in the suture of gastric ulcers, and the relief of intussusception, the removal of gall-stones and of abdominal cysts and tumours.

Surgery.

During the past year the progress of surgery, if not so exceptionally great as in some other years, has been evident. In the surgery of the abdomen the question of the

best method of uniting a divided bowel is still unsettled. Murphy's buttons, while not perhaps retaining all the favour which they had on their first introduction, are still looked upon by many as on the whole the safest as well as unquestionably the most rapid method of effecting intestinal anastomosis. That some at least of the unfortunate results which have followed the use of the button have been due to its incorrect application is extremely probable, as the best results have been obtained by those who employ it most frequently. One danger from the use of the anastomotic button is the tendency it has to remain in the bowel. This has happened many times and generally without ill effect, but occasionally symptoms of intestinal obstruction have resulted. To obviate this danger Dr. MARTIN GIL, of Malaga, has devised a button which resembles Murphy's in some respects, but it consists of decalcified ivory, so that it can be dissolved by the digestive juices after having accomplished its work of uniting the bowel. Dr. GIL has employed the method with success in dogs, but the button has not yet been used on the human body. Those who decline to avail themselves of the anastomotic button either employ some form of "bone bobbins" such as that invented by Mr. MAYO ROBSON or trust to simple stitching without mechanical aids. The fact that every one of the methods mentioned gives excellent results and is extensively employed shows that a skilful and experienced surgeon can safely unite divided intestine by any of them and that he may be expected to attain the greatest success by using that method with which he is most acquainted. Even in the future we must not look for a complete discarding of any of these methods unless some new modification may render one of them unquestionably superior to its rivals.

The question of the treatment of intussusception is of exceeding importance. In days before aseptic operations were possible it was natural that the surgeon should endeavour to avoid if possible opening the peritoneal cavity and therefore heroic efforts were made to reduce the intussusception without operation. Injection and inflation were extensively and in fact practically exclusively used, but the results were by no means satisfactory; it was found that a very large proportion of the children died; and indeed it is now obvious from a closer study of the anatomy of the disease that in many of the cases it is utterly impossible that injection or inflation should reduce the invaginated bowel. All intussusceptions confined to the small intestine and all those of the ileo-colic variety cannot possibly be returned by either of these methods, and even if the intussusception should involve only the large intestine or be of the ileo-cæcal form it frequently happens that it cannot be completely reduced though apparently it has all been returned and consequently the condition recurs a few hours later. It is, moreover, only in cases seen at an early date in which injection or inflation can be of any use, for nearly always inflammatory adhesions have formed within thirty-six hours of the onset. It is not therefore surprising that laparotomy should have been resorted to in the hope that it would prove a more satisfactory form of treatment. Laparotomy for intussusception is, however, no new introduction, for it was performed in 1828 by GERSON, of Hamburg. Unfortunately the child died from rupture of the gangrenous bowel. During the past year a large number of interesting papers on the subject have appeared in the columns of THE LANCET. The Hunterian lectures by Mr. D'ARCY POWER on the Pathology and Surgery of Intussusception were a valuable contribution to the subject and a paper by Dr. F. H. WIGGIN, of New York, contained notes of 103 cases which he had collected of intussusception in children. These were classified according to the treatment adopted and the irresistible conclusion was arrived at that the delay resulting from attempts at reduction by injection or inflation was often responsible for the fatal result of a laparotomy and that the best chance for the child was obtainable by an early laparotomy. In this opinion most surgeons will concur. Mr. R. LAWFORD KNAGGS, of Leeds, described two successful cases of laparotomy for this condition; Mr. BERNARD PITTS recorded seven consecutive cases of intussusception in infants treated by abdominal section with six recoveries; and Mr. A. E. BARKER read a paper before the Clinical Society of London on fifteen consecutive cases of this morbid condition. The conclusion to be gathered from all the cases is that in patients seen early and untreated by injection or inflation laparotomy offers a great probability of a successful result.

The prognosis in cases of perforation in typhoid fever is extremely grave; without surgical interference death is almost certain, but laparotomy offers a chance of recovery. Dr. J. M. T. FINNEY, of Baltimore, has collected forty-seven cases of perforation from typhoid ulceration in which abdominal section has been performed; of these thirteen patients recovered, and though this proportion is probably too high, as successful cases are always more frequently recorded than those which have proved fatal, yet even after allowing for this the result is very good. The best time for operating seems to be when the patient has recovered from the shock attending the perforation.

A successful case of surgical treatment for rupture of the liver has been recorded by Mr. CHRISTOPHER MARTIN, of Birmingham. The patient, a coal-miner, nineteen years old, was crushed between two trucks and apart from the shock of the injury no abdominal symptoms appeared for sixteen hours, when he had severe abdominal pain, a distended abdomen, and dyspnœa. Thirty hours after the accident laparotomy was performed and a very large quantity of blood-clot was found in the peritoneal cavity and a tear between one and two inches deep was seen on the under surface of the right lobe of the liver. The abdomen was washed out and drained with a glass tube, a second drainage tube also being inserted just above the pubes. The patient developed symptoms of pneumonia but ultimately he recovered completely.

There is considerable diversity of opinion as to the best method of treatment of general suppurative peritonitis. Some surgeons think that no surgical procedure is of any value in the treatment of this condition and that a fatal result is certain. Flushing the peritoneal cavity finds favour with others, while incision and evacuation of the fluid, with or without drainage, are also advocated. It has been pointed out that the heavy mortality which follows flushing is in part due to the fact that the septic exudation on the peritoneum cannot be removed by a

stream of water, and therefore Dr. FINNEY has practised systematic cleansing of the whole of the peritoneum by pledgets of gauze wrung out of hot salt solution. The method has proved successful in five consecutive cases and is deserving of consideration and trial.

Mr. W. H. BATTLE has pointed out a symptom of peritonitis which has hitherto not been described. It consists of an œdema with tenderness in the groins extending to the scrotum but not extending down the thighs. He has observed it in two patients and another case has been reported by Mr. D. R. P. STEPHENS, of Hove. The symptom seems likely to be of use in some obscure cases.

Probably the most sensational surgical novelty of the year has been the re-introduction of the treatment by forced reduction of spinal curvature due to caries. Though employed from time to time for many years it is only recently that the method has been extensively tried. Dr. CHIPAULT and Dr. CALOT, two French surgeons, are the chief advocates of the method, though the former would limit it to those cases in which the reduction can be effected with the exercise of but little force. Dr. CALOT has performed "forcible reduction" in a large number of cases and at the Moscow Congress he demonstrated the process by reducing and putting up in plaster six cases in the space of an hour and a quarter. Mr. ROBERT JONES and Mr. A. H. TUBBY performed the operation many times at Liverpool and read a paper on the subject at the Clinical Society of London in November. It cannot be said that the method has met with a very wide acceptance at present in this country; there is a great disposition to await the results of the treatment in those cases to which it has already been applied. There seems to be no doubt that in many instances a very marked spinal curvature may be immediately reduced unless firm bony ankylosis has taken place with very little immediate risk. Paraplegia if present often disappears after the operation and does not seem to have followed the reduction. Paralysis has occurred in at least three cases after the operation, but there has been very little reason to think it has been directly due to the operation, for in cases of caries of spine treated by ordinary methods paralysis occurs in a large percentage, some say 20 per cent. These facts must be freely admitted, but it is quite another thing to acknowledge that these cases are really benefited. The separation of the vertebræ produced by the extension must leave a large gap, which has to be subsequently filled with bony tissue if any real recovery is to result. For this to occur an extended period of fixation is required and until many months have elapsed and there is an opportunity of seeing the final results it would be premature to declare the method a success.

The treatment of chronic enlargement of the prostate by castration or by division of the vas deferens is steadily gaining ground and though untoward results occasionally follow yet it is indisputable that in the majority of cases atrophy of the prostate ensues and the difficulty in micturition is greatly lessened. A further knowledge of the exact pathology and varieties of the enlargement of the gland will doubtlessly enable us to apply this treatment only to those cases to which it is best suited.

It is only of recent years that success in the treatment of tuberculous ulceration of the bladder has been possible and even now cases are rare. An interesting instance of this condition treated by suprapubic cystotomy and curetting was recorded by Mr. EDWARD COTTERELL; recovery was rapid and perfect.

Wounds of the heart are almost always rapidly fatal, but we have recorded two instances during the past year in which life has been saved. In the first a man who was under the care of Dr. PARROZZANI, of Rome, was stabbed in the left side and five hours later he was brought to the hospital extremely pallid and with a heart beat barely perceptible. An operation was performed at once. A flap was marked out comprising the whole thickness of the thoracic wall and containing portions of the fifth, sixth, seventh, and eighth ribs. This was turned inwards and the left pleural cavity was found to be filled with blood and an opening an inch in length was seen in the pericardium; the stab had also penetrated the left ventricle and a finger was passed into the cavity. Blood was flowing at each heart-beat from the wounded ventricle. This wound was closed with four stitches and then the pericardial wound was sutured and the skin incision also. The patient recovered completely. The second case was under the care of Dr. S. PRIOR, of Woodilee Asylum, Lenzie, Glasgow. A man, aged forty-three years, had tried to kill himself previously, and his second attempt was made by pushing an iron pin through the chest-wall a little below and internal to the left nipple; the portion of the pin within the chest measured three inches and the part outside moved up and down every time the heart beat. The pin was withdrawn and no ill-effects followed, the wound healing by first intention.

An account of the surgery of the past year would be incomplete without some account of the present use of the Roentgen rays. Though it is still doubtful what their exact nature may be, yet we can obtain them with more ease and certainty than before. An adjustable vacuum tube has proved very useful. Dr. J. MACKENZIE DAVIDSON has devised and described in THE LANCET of Oct. 16th a very ingenious apparatus by which the exact position of an object photographed by the aid of the Roentgen rays can be determined within a few minutes after the negative is taken. The description of the apparatus is too lengthy for insertion here, but it is very simple in use. It has been fully tested on the living subject and has proved very accurate. It has become almost a routine practice to use the x rays in cases of fracture or dislocation in which any doubt exists as to the exact lesion present. Skiagraphy has been also utilised to some extent for renal and vesical calculi and we published a plate from photographs by Dr. A. P. LAURIE and Dr. J. T. LEON of a case of a calculus in the bladder of a boy nine years old; the stone was clearly visible and a plate taken after litholapaxy showed the absence of the calculus. Dr. W. J. COLLINS removed from the thigh a bullet recognised by the aid of the x rays; it had been embedded three years. Dr. W. S. HEDLEY has shown that if paper or other flexible sensitised surface is used to obtain the skiagram it must be kept quite flat and not bent round the limb or distortions will be shown which do not exist. The Roentgen

Ray Society, established a few months ago, should advance our knowledge of the scientific and practical aspects of the rays.

Obstetrics and Gynæcology.

At the Obstetrical Society of London several papers of considerable interest have been read during the year. At the January meeting a note on the Etiology of Eclampsia was read by Dr. MACNAUGHTON JONES based on a case in which he had induced abortion for albuminuria. Injections of pilocarpine had also been given in the case. In the course of the discussion on the paper the risks of the use of pilocarpine in the treatment of puerperal eclampsia were pointed out and especial stress was laid on the danger to the patient from the pulmonary œdema that is caused by the use of the drug in question. At the same meeting a paper on Breech Presentation with Extended Legs was read by Dr. W. S. A. GRIFFITH and Dr. A. W. LEA. Among other points of interest in the paper may be mentioned (1) the statement that the position in question is most frequently met with in primiparæ and (2) the conclusion arrived at by the authors—that most cases of the kind do not require interference—which appears to require confirmation. Incidentally Dr. CHAMPNEYS insisted on the value of pressure from above in breech cases, the patient being in the lithotomy position. The President of the Obstetrical Society (Dr. CULLINGWORTH) selected as the subject of his inaugural address the Undiminished Mortality from Puerperal Fever in England and Wales, in which he showed that "notwithstanding the introduction of antiseptics the almost complete banishment of the disease from our lying-in hospitals and the general advance in our obstetrical knowledge the death-rate (from puerperal fever) has not only not diminished but in some districts has actually increased during the past few years." He formulated the conclusion of his careful inquiry into the matter by insisting that "either the profession is not convinced of the possibility of stamping out puerperal fever by the methods that have been proposed or it has failed to carry out those methods with the thoroughness that can alone ensure success." His general conclusion was that the high death-rate from puerperal fever in this country is attributable mainly to the large number of confinements attended by ignorant and untrained midwives and to laxity and half-heartedness in the use of antiseptic precautions in private practice. At the same meeting Dr. GILES read a paper on the Cyclical or Wave Theory of Menstruation based on observations on the temperature and the pulse before, during, and after menstruation. In April Dr. G. F. BLACKER read an interesting paper on the Treatment of Placenta Prævia by Champetier de Ribes's bag. This method of treatment was recommended instead of version in the more serious cases of hæmorrhage due to placenta prævia, the bag being introduced into the amniotic cavity after the membranes are ruptured. Among the advantages claimed for this method of treatment were that it arrested the hæmorrhage, that the bag dilated the cervix, that the bag was a very powerful stimulus to uterine action, and that the fœtal mortality was lessened in the cases where it was used in preference to version. At the meeting in May Dr. THOMAS WILSON read a paper on a case of Chronic Axial Rotation of an Ovarian Cyst giving rise to extreme twisting of the elongated uterus; and Mr. JOHN W. TAYLOR read a paper on a case illustrating the treatment of (so-called) abdominal pregnancy at full term in which he had operated at the twelfth month with recovery of the patient. A remarkable point in the case was that the patient felt exactly as she had done in former pregnancies except that the movements of the child were unusually distinct and painful. At no period of the pregnancy had there been any acute pain, sudden illness, or fainting. Mr. TAYLOR said he would always prefer to operate at term and that he would never purposely wait for the death of the child before operating. At the June meeting a paper was read by Dr. AMAND ROUTH on Parturition during Paraplegia, based on a case in which there was complete paraplegia below the level of the sixth dorsal vertebra due to an accident occurring at the seventh month of pregnancy. Labour did not come on till two months afterwards and pursued a fairly normal course. During "a pain," however, the patient only experienced a tight feeling at the epigastrium with a desire to hold her breath without any painful sensation. At the July meeting a paper was read by Dr. GILES and Dr. MACLEAN on two unusual cases of Tubal Gestation, one causing chronic intestinal obstruction and associated with hæmatosalpinx of the non-gravid tube and the other simulating retroversion of the gravid uterus. At the same meeting Dr. LEWERS read a paper on a case of Primary Sarcoma of the Body of the Uterus (Deciduoma Malignum) in a patient twenty-four years of age treated by vaginal hysterectomy. There was a strong probability that she had not been pregnant. Mr. DORAN at the October meeting read a paper on the Management of True and False Capsules in Ovariotomy, which gave rise to an interesting discussion in which the use of iodoform gauze for drainage and the possibility of intestinal obstruction occurring from adhesion of intestine to the stump some time after ovariotomy were alluded to. At the November meeting Mr. BLAND SUTTON read a paper on Abdominal Hysterectomy for Myoma of the Uterus with brief notes of twenty-eight cases. His view that "it was becoming a plain duty to point out to patients with uterine myomata—as was done when they had ovarian tumours—that the earlier the tumours were removed the less the operative dangers and therefore a diminished peril to life" gave rise to considerable criticism. Many of those present were of opinion that in a large proportion of cases uterine fibroids do not need to be operated on either by hysterectomy with the extra-peritoneal method or the intra-peritoneal method, or indeed by any other method, but are best left alone. Another point of importance mentioned in the discussion may be briefly referred to. In comparing the results of hysterectomy for fibroids by two different operators it makes a great deal of difference whether the series compared are both series of *severe* cases of fibroids or whether in the one series there is a large proportion of simple cases while in the other most of the cases are severe. At the last meeting of the year Dr. WALTER W. H. TATE read a paper on three cases of Pyometra complicating Cancer of the Cervix; and Dr. R. G. MCKERRON one on the Obstruction of Labour by Ovarian Tumours in the Pelvis, the discussion on which was adjourned to the next meeting.

During the past year at the British Gynæcological Society

the then President, Dr. GODSON, delivered an address on Antiseptic Midwifery and Mr. J. W. TAYLOR read a communication on Two Cases of Pan-Hysterectomy after Previous Treatment by the Clamp Operation. Dr. BEATSON, of Glasgow, read a paper on his method of Treatment of Inoperable Carcinoma. In one case—one of recurrence after removal of the breast for cancer—removal of the ovaries and tubes with the administration of thyroid extract had apparently resulted in restoring the patient to good health. In his later cases, five of cancer of the breast and four of uterine cancer, the results of the above treatment had not been satisfactory. Dr. HERBERT SNOW read a paper on the Value of Exploratory Laparotomy *per se* in (*a*) Real and (*b*) Supposed Malignant Disease of the Abdominal Organs. Professor HECTOR TREUB, of Amsterdam, read a paper on the Mechanism of Inversion of the Uterus. Mr. SKENE KEITH read a paper on Dysmenorrhœa which was limited to the treatment of uterine dysmenorrhœa. In his opinion the pain was caused not by a stricture but by the bending of the uterus *plus* the thickening of the mucous membrane and the congestion naturally present at the commencement of menstruation. Dr. SMITH read a paper on a case of Puerperal Peritonitis treated with the ant-streptococcic serum.

A large number of original communications on Obstetrical and Gynæcological subjects have appeared in our columns during the year to some of which we may very briefly allude. Thus Dr. MORE MADDEN contributed a paper entitled a Plea for the Larger Use of Ergot in Obstetrics; papers have appeared bearing on the treatment of puerperal fever by the anti-streptococcic serum, among which may be named one by Dr. J. D. RAWLINGS entitled a Case of Puerperal Septicæmia treated with Anti-streptococcic Serum; Death; and another by Mr. EUSTACE SWANWICK on Puerperal Septicæmia treated without Streptococcic Serum; Recovery. Several papers on points of interest and importance connected with ovarian tumours have been published during the year, among which we may especially mention the Cavendish lecture on Ovarian Tumour with Pregnancy, by Sir JOHN WILLIAMS; Deaths after Ovariotomy, with remarks on the Value of Flushing without Subsequent Drainage of the Peritoneal Cavity, by Mr. MEREDITH; and a paper entitled Some Notes on Ovarian Tumours, with a first series of Fifty Ovariotomies, by Dr. GOW. In addition to the papers on the operative treatment of fibroids already referred to above there is one by Dr. W. DUNCAN on Eighteen Consecutive Cases of Intra-abdominal Hysterectomy for Fibroids. Among the shorter communications of special interest we may particularly mention one on a remarkable case of Avulsion of the Uterus, by Mr. E. HICKSON SMITH. In that case immediately after delivery at term the uterus was torn away by a midwife, but the patient made a good recovery.

Therapeutic Progress.

Although the publications connected with the treatment of disease have, as usual, been very numerous during the past year interest continues to centre round the different applications of various forms of serum treatment. The record of cases of diphtheria treated with antitoxic serum has fallen, or at least the number of publications is less than in the previous year, but this appears to be due to the more general acceptance of antitoxin. The cases which are published include a series of triumphs and, as usual when the majority are agreed upon any given point, there is less room for debate and less need for the record of experiences. More recently greater attention appears to have been directed to the use of tetanus antitoxin, and in spite of the value of experimental work it must be admitted that the clinical results have been frequently disappointing. Side by side with these investigations much valuable work has been done in connexion with many of the older remedies.

The list of new drugs to be enumerated is this year comparatively small, and even in this list, with one or two exceptions, the novelties do not seem to be of any great importance. Questions connected with therapeutics have been freely discussed and the best indication of the tendency of the views of modern physicians was perhaps afforded by the debate on the treatment of insomnia at Montreal. We have in these pages long protested against the continuous administration of hypnotics, and from time to time have sounded a warning note of the dangers connected with many of the newer hypnotics. Hence, we are entirely in accord with the discussion at Montreal, since it showed that most of the speakers were far from being content with the routine employment of any particular drug. The discussion in many ways served to indicate the limits of utility of different hypnotics, such as sulphonal, paraldehyde, urethane, and the like. Some of the speakers mentioned comparatively new remedies such as pellotin, trional, and chloralamide, but the whole tendency of the discussion indicated that causes of insomnia, rather than new remedies, should be sought for.

Perhaps the greatest amount of literature in connexion with new remedies deals with the search for a satisfactory local anæsthetic. It is not so many years since cocaine was introduced with such extremely laudatory notices that it was perhaps somewhat too indiscriminately used and soon claimed a fairly large percentage of undesirable effects. Most of these effects were absent, or at least were thought to be absent, with eucaine, a remedy which was fairly largely employed in 1895 and 1896. From the first some patients complained bitterly of the smarting or burning pain which resulted from the local application of eucaine and, although the subsequent anæsthesia was sufficiently satisfactory, it was felt that it had been rather dearly purchased. It is perhaps yet too early to determine the future position of eucaine in medicine, but nearly all the published accounts during the year have shown dissatisfaction with the drug, even although its anæsthetic powers are fully recognised. On the other hand, in its favour it may be stated that it appears to produce toxic symptoms comparatively rarely and that the toxic dose is greater than that of cocaine. Another local anæsthetic—which in composition is said to be closely allied to phenacetin—is holocain. This also causes some transient sense of burning when applied to the conjunctiva, but it has been claimed for this drug that it has no effect on the pupil, on accommodation, or on the blood-vessels. Inasmuch as this drug has only very recently been employed, the published accounts so far are purely laudatory. Orthoform and anesin are two other local

anæsthetics of recent introduction, of which, however, very little is yet known. Some interesting experiments have been made with the view of determining the activity and the purity of cannabinol, which seems to produce symptoms practically identical with those of Indian hemp; while further experiments have been made with mescal, which obviously possesses a somewhat dangerous power of producing subjective visionary sensations. The accounts of the effects produced by this drug written by Dr. WEIR MITCHELL and Mr. HAVELOCK ELLIS will probably be read as interesting contributions to medical literature, even although they do not pretend to have any therapeutic application.

The position of quinine in medicine appears to be established on such a firm basis that it is rather a shock to find recommendations of substitutes for it. The claims of the substitutes are invariably that they produce less giddiness and tinnitus, while they are credited with similar powers of lowering the temperature. Euchinine has been recommended on these grounds, and from many accounts it appears to have given satisfaction both as an antipyretic and anti-neuralgic. It shares with quinine the disadvantage of extreme insolubility. Another anti-neuralgic or antipyretic is a glucoside named kolanine, derived from the kola nut. Other antipyretics which have been described are kryofin and pyramidon. The former is said to be at least as useful as phenacetin or antipyrin, but like these it is not free from the charge of occasionally producing undesirable effects. Pyramidon has been used in typhoid fever and also in some cases of locomotor ataxy. In spite of the introduction of two new antipyretics there can be no doubt that the older methods of cold sponging and baths still remain in favour. The group of antiseptics has not been materially enlarged. The older remedies are still found efficient and free from objection. Acetanilide has, however, been recommended for local application while chinosol and airol have also been used as antiseptics. Juniper tar oil, or oil of cade, was not long since recommended as a disinfectant in cholera; careful and extended research has, however, demonstrated that although an alkaline solution has a marked disinfecting action it has relatively weak powers. It has been suggested that in the local treatment of rheumatism oil of wintergreen is preferable to salicylate of sodium, and apart from the greater rapidity of action obtained from the former drug it is said to be free from the liability to produce tinnitus.

Several valuable papers have been published in connexion with the treatment of the cardio-vascular system. Foremost amongst these stands an interesting account by Dr. C. R. MARSHALL of the antagonistic action of digitalis and the members of the nitrate group. In this he furnishes a very useful summary of the actions of digitalis and from the experimental side appears to have shown that there is an antagonistic effect on the muscle cells when these substances are used in combination. Further experiments have also been made with digitoxin which, however, appears to be almost too active for safety. Erythrol tetranitrate, which was introduced by Dr. BRADBURY in his Bradshaw Lecture, has in some cases given satisfaction in procuring relief of asthmatic attacks and also of cardiac pain. Pilocarpine has been used for the relief of excessive sweating although it generally acts as a diaphoretic. Much of a contradictory nature has been written of its value in the treatment of puerperal eclampsia. Many observers maintain that it is a dangerous drug since it provokes excessive bronchial secretion. It has been suggested that this might be counteracted by the simultaneous employment of atropine.

Creosote, which was formerly much used in the treatment of phthisis, has gradually lost favour owing to its effects upon the stomach and intestines; these discomforts are said to be avoided by the employment of creosotal, which reduces the bronchial secretion, cough, and night-sweats. Hydrastis Canadensis has been employed in cases of early phthisis and has been found to be an efficient expectorant, while satisfactory results in the treatment of whooping-cough have been claimed for both naphthalene and resorcin. In the paper by Dr. MARSHALL referred to above the diuretic influence of digitalis was considered. It is somewhat curious to find that strophanthus has lately been recommended as a diuretic, and it is stated that it possesses greater rapidity of action and more powerful diuretic effect, while it is free from the disadvantage of cumulative action or of producing digestive disturbance. The discussion upon diuretics at Montreal was prefaced by two admirable papers which dealt respectively with the clinical and pharmacological aspects and left but little scope for subsequent debate. At the same meeting the diuretic action of apocynum cannabinum, the Canadian hemp, was favourably considered, although it was admitted that it might produce violent emesis and catharsis. These undesirable results were, however, attributed to the admixture of the bitter fibre of the wood with the bark of the root. Salicylate of sodium and caffeine have also been employed for their action on the kidney; the former has been found to check the diuretic action induced by the latter. Small doses of cantharides have been recommended in acute infectious nephritis, though they are contra-indicated in cases of interstitial nephritis. Uræmic dyspnœa has been treated with ether administered by the mouth and subcutaneously, but it seems only to be of service in cases associated with much pulmonary engorgement. As a laxative for the treatment of chronic constipation in children olive oil has long held a certain degree of favour in domestic medicine; recently however it has been urged that it should be employed with a free hand in typhoid fever. Rectal injections of a quarter to half a pint are, if necessary, supplemented by a large breakfast-cupful given by the mouth, and the results claimed for this treatment appear to merit further investigation.

Early in the year we published an account of the treatment of dysentery with monsonia ovata, which is said to exert a specific action distinct from mere astringency. Taka diastase has been recommended in our columns for some forms of indigestion, and chinaphthol is said to escape change within the stomach and to split up into its constituents in the intestine, where it is credited with local action. Of the list of drugs which have been used in affections of the skin permanganate of potassium in the treatment of lupus, thyroid extract in prurigo, and hypodermic injections of thiosiamine in keloid deserve mention. Tuberculous peritonitis is said to have yielded to the use of

creosote in the form of enemata, while injections of glycerine and iodoform into the synovial cavity of the knee-joint are believed to have produced satisfactory results in tuberculous disease of the knee. Thyroid extract has been used with apparent benefit in a large number of different diseases, many of which are devoid of definite pathology. The treatment of syphilis was discussed at some length at the Montreal meeting and allowed scope for detailed remarks on the relative value of different preparations of mercury.

Finally we may remark that the new edition of the British Pharmacopœia is, we understand, approaching completion and is likely to be issued at no very distant date.

Ophthalmology.

Two important ophthalmological congresses have been held this year; one in connexion with the meeting of the British Medical Association at Montreal and the other at Moscow as a section of the twelfth meeting of the International Congress. In the latter the subject of Trachoma was taken up by M. HIRSCHBERG who gave a list of towns in which it is prevalent and discussed the preventive and curative measures that should be adopted for its suppression. In the more serious cases surgical proceedings are required whilst in the slighter cases the usual remedies, such as copper sulphate and silver nitrate, are sufficient. He, as well as M. NENADOVIC, thought that with Government aid and the enlightenment of the public mind in regard to the importance of ablutions and the use of pure water the disease, like leprosy, might be stamped out in Europe. Professor KNAPP and Professor DOHNBERG recommend for the expression of the trachomatous granulations the use of modifications they have devised of the forceps, which can be very readily and effectively applied, whilst a special form of crayon made of caoutchouc has been suggested for the same purpose by M. DEBAGORY-MOCRIÉVITCH. Another mode of treatment of this troublesome affection is the application of solution of potassium iodide practised by M. ROSELLI, of Rome, with the immediately subsequent application of oxygenated water. M. DARIER removes the granulations, if few in number, with scissors; if numerous by careful curettage. M. NIESNAMOV employs a saturated solution of iodine in ether, others itrol or silver citrate, others formol; others again resort to galvano-cautery; whilst M. GERMANN, of St. Petersburg, believes that in many instances the focus of the disease is situated in the lacrymal sac which must be attacked or extirpated to effect a permanent cure. Attention may be called to the recently issued Blue-book which contains a report by Mr. SYDNEY STEPHENSON on the Ophthalmic State of Poor-law Children, in which will be found an excellent summing up of the methods adopted in England for the prevention of the spread of this disease, including the arrangements that should be made for class-rooms, dormitories, infirmaries, and for general and local hygienic treatment.

The subject of Trachoma was also earnestly discussed at the Montreal meeting, Dr. GEORGE STEVENS adducing evidence to show that the disease is particularly prevalent amongst those nations which present the extreme mesocephalic form of skull when the head is high in proportion to its width and length, such as the Irish, Italians, Jews, and Japanese; whilst it is rare in dolichocephalic peoples like the negroes and in brachycephali. It is in his opinion particularly associated with anophoria, both visual planes tending to rise above the plane of the horizon. The disease seems to be very rare amongst the North-American Indians.

At the Moscow meeting another burning question was introduced—viz., the operative treatment of high myopia, the discussion being opened by one of the strongest supporters of the plan of treating it by the removal of the lens, M. FUKALA. The number of cases thus treated has now reached 2000. The plan which M. FUKALA and M. DARIER have adopted and which appears to give excellent results consists in the operation of discission followed by extraction, but M. VACHER, of Orleans, prefers the ordinary operation of extraction. The lower limit of myopia for which the operation should be undertaken seems to be that degree which is rectified by the concave glasses named 10 D. One successful case operated on by M. FUKALA had a myopia of 31 D. There are dangers attending the operation which should not be overlooked, such as iritis and corneal troubles as well as suppuration of the globe, whilst it may be remarked it is found not to exercise any preventive action on the occurrence of detachment of the retina which is a frequent concomitant of high degrees of myopia especially in cases where there is extensive posterior staphyloma with atrophy of the choroid. The vision is in general but not always improved. The results of the operation in regard to the subsequent refraction of the eye are rather surprising since M. SCHLEICH has obtained emmetropia or normal vision, the patient requiring no glass for distance after extraction of the lens in all degrees of myopia from 12 D. to 22 D. The operation is contra-indicated in cases of extensive choroiditis and optic nerve complications. The etiology of the disease known as the ulcus corneæ serpens or Saemisch's ulcer has been investigated by M. UHTHOFF and M. AXENFELD who have satisfied themselves that in almost all instances the Fränkel - Weichselbaum's diplococcus or pneumococcus is to be found, generally alone but sometimes associated with staphylococci and xerosis bacilli; and from their inquiries it follows that if on examination the pneumococcus be recognised immediate and energetic treatment should be commenced, the use of the galvano-cautery affording the best hope of a successful issue Neuralgia of the eye and temple, though often dependent upon errors of refraction and capable of relief or cure by the employment of appropriate glasses, sometimes proves recalcitrant, and in such cases much benefit can be obtained, according to Professor BENEDIKT, by the application of induced electric currents, one pole of which represented by the finger of the operator is applied to the lid, whilst the other pole is placed on the temple. The strength of the current can thus be pretty accurately gauged. The employment of intravenous injections of mercury in the treatment of syphilitic diseases of the eye has been strongly recommended by Dr. JEHIN-PRUME, of Montreal, who considers this method superior to the employment of mercury by the mouth, by frictions, fumigations, or by subcutaneous or subconjunctival injections. The quantity he injects is about a centigramme or less of a 1 per cent. solution of cyanide of mercury and the vein should be full.

An important discussion on Retro-ocular Neuritis was opened at the Ophthalmological Society of the United

Kingdom by Mr. MARCUS GUNN and Dr. BUZZARD. The former pointed out that cases of this form of disease were characterised by rapid failure of vision often in one eye alone, accompanied by pain and tenderness in neighbouring parts, absence of early ophthalmoscopic changes and with a tendency to recovery, and summed up their etiology under the heads of orbital cellulitis, inflammatory and other affections of the sinuses and nasal mucous membrane, toxic affections, and various local manifestations of general diseases such as syphilis, tubercle, gout, and rheumatism, whilst Dr. BUZZARD particularly dwelt on the connexion of the disease with disseminated sclerosis. The discussion, in which many speakers took part, seems to show that several distinct affections are included under the term retrobulbar neuritis which are at present insufficiently diagnosed from one another.

The treatment of toxic amblyopia by means of subcutaneous injections of serum has been advocated by M. DE WECKER at a meeting of the French Ophthamological Society, the serum employed being that known as Chéron's, which contains 1 per cent. of carbolic acid, 2 per cent. of sodium chloride, 4 per cent. of sodium sulphate, and 8 per cent. of sodium phosphate, and the quantity injected varying from 60 to 150 grammes per diem. From the discussion which followed it appeared that this plan of treatment is more freely practised in France than in this country and if the satisfactory results obtained prove persistent it might with advantage be more largely adopted. The usual mode of dealing with wounds of the cornea accompanied by protrusion of the iris in this country is to enlarge the wound with a Graefe's knife or keratome, to remove the prolapsed portion of iris, taking special care to free the iris at the angles of the wound, and to keep the parts at rest with a pad and bandage. To effect the removal of the prolapsed iris is, however, not infrequently extremely difficult, and where the lens though uninjured is in very close relation with the inner surface of the cornea the introduction of a knife, however carefully executed, leads to injury of the capsule of the iris followed by cataract. In such cases M. ROHMER, of Nancy, supporting his views by reference to cases reported by Dr. MEYER and others, recommends instead of the performance of the iridectomy the conversion of the open wound or at least of the wound in which the iris has only an investment of epithelium into a subcutaneous one by freeing the conjunctiva round the whole periphery of the cornea and bringing the cut edge together by means of a suture in the fashion of a purse. The results he has obtained are good and the removal of prolapsed iris is not therefore always to be adopted.

The operation known as Mules's operation, in which instead of removal of the entire globe the sclerotic is eviscerated and its contents replaced with a glass or silver ball, has been largely practised by Dr. BULLER, of Montreal, and with much success. Failures are probably due to want of sufficient care in the technique of the operation, such as the introduction of too large a ball or imperfect sterilisation of the instruments and tissues; but Mr. CROSS, of Bristol, made a more serious charge against it in a paper read before the Ophthalmological Society of Great Britain—that it is apt to induce sympathetic ophthalmia.

Only experience can decide this point. Coming to a somewhat secondary matter, the question of the effect of the Auer incandescent light on the eye has been a subject of discussion. The light emitted from the Welsbach mantle, which is a net saturated with thorium and cerium oxides, contains a large proportion of ultra violet or actinic rays, but there is no evidence that it exerts an injurious action on the retina. Direct inspection of the brilliant light of the electric light has indeed been known to set up retinitis or optic neuritis, but in the ordinary modes of lighting in dwelling houses little danger is to be apprehended.

Good results have been obtained in cases of ptosis both in this country and abroad by utilising the fibres of the frontalis muscle.

An interesting series of lectures on the syphilitic diseases of the eye and its appendages were delivered before the Harveian Society by Mr. HENRY JULER.

A very complete system of diseases of the eye in five volumes is in course of publication, chiefly by American authors, under the able editorship of Messrs. WILLIAM NORRIS and CHARLES OLIVER of Philadelphia. Two volumes have already appeared, the first dealing with the Embryology, Anatomy, and Physiology of the Eye, and the second with the more general subjects of School Hygiene, the Examination of the Eye, Statistics of Blindness, and Antisepsis.

Forensic Medicine.

With the exception of the case of the murder of a husband in Japan by arsenic—a case which recalled the worst features of the MAYBRICK case—there has been no *cause célèbre* during the year to add to the annals of this revolting form of crime as affecting British subjects. It is with satisfaction that we have to record a marked diminution in the number of deaths from anæsthetics administered for the purpose of surgical operations. We have endeavoured to minimise the dangers incidental to anæsthetic dental surgery by insisting that whenever chloroform or other agent is required to produce prolonged insensibility that the utmost attention should be paid to the preparation of the patient, posture, and freedom from restraint by dress. Possibly the default of these precautionary measures taken collectively had much to do with the fatal result of chloroformisation which occurred at Rhyl. A healthy woman was anæsthetised for a protracted dental operation and before this was completed life became extinct. We have emphasised the importance in this form of "artificial sleep" of the anæsthetist giving an undivided attention to his special duty, for the life of the patient is for the time being so delicately poised that the least adverse circumstance may occasion imminent danger to existence, or death itself. The advice given by a late operating surgeon, "never interfere with the man at the wheel," cannot be too strongly endorsed. For the safety of patients it should be assumed that danger lies more in the act of anæsthetisation than in the agent itself or in a supposed abnormal susceptibility of the individual to its lethal properties. It is commonly supposed that dogs are peculiarly prone to succumb to chloroform, but recent experience shows that the grounds for the belief have been misinterpreted, for out of between 300 and 400 consecutive cases of chloroform anæsthesia only one had a fatal issue.

A death from nitrous oxide and ether reported in our columns was in our opinion due not to nitrous oxide anæsthesia but to obstructed pulmonary and cardiac circulation. Once more the neglect of the necessary precaution to test the air of wells before descending has resulted in loss of life. A workman entered a well at Brede belonging to the Hastings Corporation and was suffocated by carbon dioxide. After the accident it was discovered that a candle was extinguished at a depth of twenty feet from the surface. The suggestion that the gas was "suddenly generated" in a metal cylindered and brick walled well we considered improbable. Whilst writing of poisons, gases, and vapours we may refer to the tendency on the part of municipal bodies to utilise water-gas, which contains a large percentage of carbon monoxide, for the purposes of illumination. This was pointed out by a deputation to the Manchester and Salford authorities who had resorted to an admixture of water-gas and coal-gas for public service.

Fashion has added to her long list a method of securing victims. The sad death of a lady caused by the ignition of the vapour of petroleum hair-wash caused a thrill of horror in the community, and yet we are informed that the system in question for giving artificial grace and adornment has been more sought after than ever. It is of paramount importance that legal restraint should be put on the sale and use of this dangerous agent. Two theories were advanced to explain the explosion in the above case: (1) a flash from a distant light igniting the highly diffusible vapour, and (2) firing by an electric spark emitted by friction of the hair. We recorded our adoption of the latter.

An interesting trial took place in which a quack was indicted for manslaughter by supplying an advertised arsenical plaster which was to be applied for fourteen days to the skin previously blistered. The victim continued its use for three weeks and died from the effects of arsenic absorbed into the system. An acquittal followed.

We have had to chronicle numerous prosecutions under the Pharmacy Act. At Heywood a chemist and druggist was fined for selling vermin killer containing strychnine. The purchaser asked for rat paste which is not scheduled, whereas vermin killer is. It is evident that further restrictions should be placed on the sale of poisons and the schedule be made more inclusive. A conviction has been obtained under the Food and Drugs Act for selling laudanum of illicit quality. The official analysis showed 63 per cent. deficiency of alcohol and 90 per cent. of morphine.

A lad, aged sixteen years, died at Felling, near Gateshead, from "nicotine" poisoning through excessive cigarette smoking. We raised the question of adulteration so extensively practised in the manufacture of cheap tobacco. Two cases of acute alcoholic poisoning have been reported. In the former a man, aged twenty years, swallowed a quart of whisky for a wager and died in eight hours. In the latter a child, aged three years, took twelve ounces of whisky. The infant completely recovered after four months, having suffered from hemiplegia, strabismus, and other nerve symptoms. Acute poisoning from cocaine is becoming much less common. This is explained partly by careful dosage and partly by the fact that other local anæsthetics—e.g., orthoform—of lower toxic power have been employed as substitutes.

In Cawnpore a native professional poisoner named BHADARYAN KORI was convicted. He had used dhatura, the favourite poison of such malefactors. There is an immense field for research as to the nature, effects, and antidotes of animal poisons whether the product of gland secretion or of fermentative processes. It is well known that in India snake poison is often administered to cattle for illegal killing. Professor HANKIN investigated some cases at Agra. From cloths found in the intestines of some cows he prepared an extract which when injected into a rabbit soon killed it but when mixed with Calmette's "serum antivenimeux" it had no such lethal effect.

In order to push articles for financial gain a common device is to describe them as "non-poisonous" and this is notably the case with so-called disinfectants. At Huddersfield a woman was poisoned by taking "germol" labeled non-poisonous. It is true that these alkaline mixtures of the phenol derivatives of coal tar are less caustic and toxic than carbolic acid but still it is a question of degree and not complete immunity. On three occasions we have animadverted on the system of quackery called "Wallace-ism." It is a satisfaction to know that this panderer to the public taste for the mystical and wonderful has been publicly rewarded by the infliction of heavy fines in a Police-court. Such a requital is all the more gratifying when we consider the imperfections of the Government licensing of patent medicines.

A Pharmacy Act has been passed for Jersey. In that island carbolic acid is a scheduled poison but we find no reference to the admixture of soot or indigo with arsenic which is authorised in England.

The "sanitary oath" is slowly growing in favour and we trust ere long the Scotch method of "swearing" will entirely supersede the objectionable one which long usage has so deeply rooted amongst us and with regard to which nothing can be said in favour of its retention. It has been established by judicial authority that the Notification of Diseases Act requires that where two or more medical men attend—even though only in consultation—a case of infectious disease included in the Act each one is bound to notify to the district sanitary authorities. This is in accordance with the common sense demands for the protection of the community, otherwise singular notification of a case transported to another district would be to let loose on the invaded area an infecting medium which might do incalculable harm.

There have been several noteworthy investigations affecting medical practitioners before judicial tribunals. Mr. W. R. H. HAINS had to undergo the ordeal of a criminal trial at the Old Bailey for conspiracy to procure abortion. Happily the case for the prosecution utterly collapsed, and our unfortunate *confrère* had the satisfaction of establishing his right to retain the title to professional integrity which he had so long and worthily held. Dr. GREY-EDWARDS of Carnarvon was sued for damages on the alleged ground that he had by his carelessness and negligence failed to diagnose a case of diphtheria and so to prevent by suitable precautions communication of the disease to other members of a family, whereby the head was put to pecuniary expense. The jury found for the defendant. We are happy to say that the verdict was in accord with the direction of Mr. Justice GRANTHAM who presided at the

trial of the cause. In the case BEATTY *v.* CULLINGWORTH it will be remembered that Dr. CULLINGWORTH was sued for damages on the ground that he had performed an operation on the plaintiff without consent. Rightly Dr. CULLINGWORTH gained the day and an order for a new trial was refused by the Court of Appeal. The plaintiff sought to appeal to the House of Lords *in formâ pauperis* but the Appeal Committee rejected the petition. The "Peculiar People" have had a much-needed lesson taught them by the verdict of guilty of manslaughter returned at the Old Bailey against the parents of a child who had died without medical aid having been sought. Mr. Justice RIDLEY, whilst admitting that the accused acted conscientiously, granted a release on their giving sureties for good behaviour; he said he did not want to make martyrs of them but they must understand that they must not trifle with human life by refusing to do that which the law imposed. We took occasion to subscribe entirely to his lordship's deliverances.

In the *Montreal Medical Journal* Dr. WYATT JOHNSON and Dr. VILLENEUVE have recorded some extremely interesting observations on Medico-legal Entomology. They have shown that the cadaver is attacked at different periods of decay by different insects. This opens up a new field for the investigation of the probable date of death, but as yet the results are not sufficiently precise to be put forward as corrobative evidence of facts attainable by physico-chemical research. The subject of premature burial which had undergone lively discussion in France, America, and this country was commented on by us. The conclusion we arrived at was that there was no need for the "reform" advocated by those who believed that live burial was a by no means uncommon event.

The murderers of Miss CAMP in a railway train and of a servant girl near Windsor still remain undiscovered. These crimes caused universal horror and dismay, but their effect upon the public mind must pall before the tragedy which has lately removed from our midst a man universally admired, respected, and beloved—we refer to the melancholy death of Mr. WILLIAM TERRISS. Concerning the assailant's mental condition in this last case it would clearly not be right for us to say anything while the case is *sub judice;* the other two crimes bore every appearance of having been the purposeless acts of a homicidal maniac.

Dental Surgery and the Practice of Dentistry.

In the practice of dental surgery fair progress has been made during the past year. From a purely scientific point there is but little new to record, although the year has been by no means a barren one. Several excellent papers have appeared in the columns of the various dental publications, some of which were of great value from a practical point of view. Mr. J. H. BADCOCK contributed a paper on Copper Amalgam, which was an admirable *résumé* of the opinions held by the various operators on the merits and demerits of this filling material. Mr. ALLAN GOADBY also contributed a note on the Discolouration of Copper Amalgam. In a paper on Nasmyth's Membrane, which appeared at the beginning of the year, Professor PAUL showed that this membrane could no longer be regarded as a thin layer of cementum and that it was composed of an outer layer of large flattened epithelial cells and an inner thin translucent layer usually marked with hexagonal impressions derived from the ends of the enamel prisms. Another paper worthy of note was published by M. CHOQUET on the leptothrix buccalis. Mr. HOPEWELL SMITH'S communication on the Microscopical Aspect of Certain Lesions induced by Caries has added considerably to our knowledge of the pathological changes which occur in the dental pulp induced by caries. A paper showing much careful investigation has appeared from the pen of Dr. GREVERS on the various forms of occlusion of the teeth. The author has attempted to classify the various forms of articulation, with the result that he has placed on record much valuable information. In operative dentistry progress has been made in several directions. Cataphoresis has attracted the attention of many operators and although the methods of employing it have improved much requires to be done before it is likely to take its place as a general method of producing local anæsthesia. The system of inserting amalgam fillings in combination with oxy-phosphate cement has gained ground rapidly and there is little doubt that by this method a most efficient filling can be obtained and the time does not seem far distant when it will be possible with this material to make fillings as satisfactory as those obtained by the use of gold. The immediate regulation of teeth has excited a certain amount of interest and it seems probable that it will prove of some value in certain types of irregularities of the teeth. The use of "crowns" in the treatment of teeth beyond the stage of filling has increased and improvements have been made in the more extended use of porcelain in their manufacture; this has been mainly brought about by the introduction of small electrical furnaces. "Porcelain inlays" for cavities in conspicuous situation have been more extensively used. The x rays as an aid to dental diagnosis have proved of some use and when some of the difficulties attending their employment in the mouth have been overcome they will undoubtedly prove of great value in solving many difficult cases where the treatment depends upon the presence or absence of teeth. Several deaths from chloroform given for dental operations have been recorded. This is extremely unsatisfactory when such safe anæsthetics as nitrous-oxide gas and ether are available. With regard to nitrous-oxide its use with oxygen has greatly increased, a fact easily accounted for on account of the much more satisfactory anæsthesia obtained by the use of the two combined. Of local anæsthetics eucaine has perhaps made slight headway, it being found to be a more harmless drug than cocaine.

In literature several new works have to be recorded, the most important being the fourth edition of TOMES' Dental Surgery. A seventh edition of RICHARDSON'S Mechanical Dentistry has made its appearance and EVANS'S Crown and Bridge Work has reached its fifth edition. A new work on Mechanical Dentistry by ESSIG has been published, and a text-book on Operative Dentistry edited by Dr. KIRK.

The British Dental Association, which is so intimately bound up with dentistry in England, held a most successful meeting in Dublin under the presidency of Dr. THEODORE STACK. Under the ægis of this body several important prosecutions in connexion with the Dentists Act have been undertaken with the result that

Clause 3 has been shown to be capable of wider interpretation than was generally thought. A number of other prosecutions conducted by private individuals have also taken place, but not in all instances with successes, and the failures seem on looking carefully at some of the cases to have been due to want of care on the part of those conducting the prosecutions. If prosecutions are undertaken by private individuals every possible care should be taken in conducting the case, since one failure discounts many successes. Dental education has made fair progress and some radical changes have taken place in the curriculum of the Royal College of Surgeons of England—changes which will ensure a sounder and better education of the dental student and therefore a more reliable and useful practitioner. The consideration of the various reports submitted by Mr. C. S. TOMES as inspector of the dental examination have been under the notice of the General Medical Council during the year and there can be little doubt that the effect of these reports will be a "levelling up" of the examinations held by various examining bodies. Dental surgery has during the year been deprived by death of several eminent workers. In England we have lost Mr. JAMES SALTER, a man whose researches into the pathology of teeth have had an important influence on every-day practice. The deaths of M. MAGITOT, of France, and Dr. HOLLAENDER, of Germany, will leave gaps not easily to be filled.

Biology and Physiology.

In the domain of biology and physiology no discovery of capital importance has to be recorded, yet it may fairly be said that there has been an advance along the whole line. The number of students of biology, as of other branches of natural science, is increasing but even now though the field is wide the reapers are few. The opinions of several experienced teachers and lecturers on the best mode of giving instruction in anatomy were elicited at the annual meeting of the British Medical Association which met in Montreal. It was agreed on all hands that dissection was of the highest practical importance and that familiarity with topographical anatomy could hardly be pushed too far but that there were certain advantages to be derived from lectures and from various accessory means of instruction which ought not to be neglected. It was pointed out that a well thought out scheme of lectures should supply the learner with facts derived from comparative anatomy and from histology which should enable him to gain a clearer conception than can be obtained from text-books of the structure, use, and fitness of the several parts and organs of the body and, so far as is known, the reasons for the existing conditions. A good course of instruction should also include the exhibition of accurate diagrams and lantern slides, carefully made models, dissected and frozen sections, and the mapping out upon the skin of the disposition of the parts in different regions by means of coloured pencils. It is only in well-appointed schools that all these means can be used, but each in their turn have been found serviceable to certain classes of students. The difficulty of giving in a short space even the barest outline of the progress made in such subjects as anatomy and physiology consists in the immense amount of material that accumulates year by year and which it is impossible to read through, much less to digest. No better evidence of this can be afforded than the fact that whereas quite within the memory of the older members of the profession the number of periodicals lying on the tables of the Royal College of Surgeons of England did not exceed 30 or 40, there are now no less than 500, most of which though ostensibly devoted to medicine yet often contain articles, accounts of experiments and statements of facts that throw a vivid light on biological problems.

Among the remarkable recent experiments—remarkable, because it profoundly modifies our ideas of life—is that performed by Mr. H. T. BROWN and Mr. F. ESCOMBE, who have exposed seeds in liquid air but protected from its direct action by glass globes at a temperature of 180° to 190° C. below zero for hours and have found that if slowly thawed their vitality is preserved without impairment and that under appropriate conditions they germinate easily and well, producing healthy plants. This is entirely in accordance with KOCH'S experiment showing that the vitality of seeds might be long preserved when they were kept in a Geissler's vacuum tube and with the experiments of GIGLIOLI, recorded a year or two ago, in which seeds proved active after exposure for sixteen years to pure nitrogen, chlorine, hydrogen, arseniuretted hydrogen, and nitrous oxide gases and, after immersion for the same space of time, to strong alcohol and even to an alcoholic solution of bichloride of mercury. If life be synonymous with change it must be acknowledged that at such a temperature and under such conditions the change, if not altogether arrested, must take place exceedingly slowly, and again it may be asked, if life can be rendered latent for a little while why not permanently? The observations of M. LOUKINOW reported to the Biological Section at the Moscow Congress on the effects of inanition on cells show that whilst the cells of various organs are diversely affected the nutrition and multiplication of the nuclei remain comparatively unchanged thus appearing to retain to a large extent their autonomy. The researches of Mr. W. GARDINER on the endosperm of the seeds of many plants as well as those of MM. BIZZOZERO, PFLUGER, HEITZMANN, SCHÄFER, and ROBINSON on stratified epithelium and those of Mr. J. B. MACALLUM on the histogenesis of the muscle cells of the heart demonstrate that numerous threads, sometimes scattered, sometimes collected into groups, form bands and bridges which establish direct communication between the protoplasm of neighbouring cells, and thus, whilst each cell represents from some points of view an isolated microcosm having its own special organisation and functions, every cell stands in direct continuity with others which it influences and by which it is influenced. Such communicating protoplasmic threads have not been observed to exist in all cells, but their very general presence is a noteworthy fact.

The ubiquity of micro-organisms in air, water, and the bodies of animals has led to the question whether life would be possible in the absence of bacteria, a question which the experiments of MM. NUTTALL and THIERFELDER in the Hygienic Institute of the Berlin University have answered in the affirmative, since young guinea-pigs placed in a sterilised chamber supplied with sterilised air and fed exclusively on sterilised milk and in the alimentary canal of which no

trace of bacteria could be discovered after they had been killed appeared to be, so long as they were permitted to live, in perfect health.

Mr. C. DAVENPORT and Miss HELEN PERKINS have endeavoured with ingenuity to determine the influence of gravity on the movements of highly organised animals, selecting the slug as a good subject for experiment, and they conclude from their observations that gravity acts as an excitant to which the organism responds. Their elaborate experiments show the extent of the movement effected by this agency.

New morphological elements have been observed in the blood. Dr. H. F. MÜLLER, for example, describes minute spherical or rod-shaped bodies which present lively molecular movement and in addition immeasurably fine dust-like particles which are soluble neither in acetic acid nor in ether and are not blackened by osmic acid. Pigment particles and colourless flakes have been seen and described by Dr. LATSCHENBERGER. The reducing substance in the blood has been isolated by Dr. VON HENRIQUES and proves to be jecorin-sugar. A curious mode of determining the relative proportions of blood corpuscles and plasma has been suggested by two Russian naturalists which consists in determining the conductivity of the blood for electrical currents. A new hæmoglobinometer on the principle of the tintometer and a new hæmocytometer have deen devised by Dr. GEORGE OLIVER, both apparently of great delicacy and giving accurate results. Dr. T. G. BRODIE and Mr. A. E. RUSSELL have endeavoured to determine with greater approach to accuracy than has hitherto been possible, the time at which coagulation of blood takes place after being withdrawn from the vessels, and have devised an ingenious apparatus for the purpose.

A discussion took place at Montreal on the Heart-beat and from the reports it would appear that physiologists are divided on the question of the cause of the movements of the heart—some, with Dr. GASKELL who initiated the discussion, maintaining that all parts of the heart are endowed with the power of rhythmical contraction independently of nerve cells and fibres. In his opinion the cells and fibres found in the heart seemed to merely correspond with those that would be found in the segment of the vascular system which dilated constitutes the heart, the contraction being of the nature of a rhythmical muscular and not a ganglionic phenomenon. Another theory advanced was that the rhythmical action of the heart is due to the cyclical action of the calcium and potassium salts; another that whether the heart responds to stimulation of nerves inducing or inhibiting contraction, these nerves act alternately. Our knowledge of nerve and muscle is obviously at present too incomplete to permit the question to be solved.

The publication of various treatises and of numerous special articles on foods and the changes their constituents undergo in the body shows that physiological chemistry is pursued with unremitting activity both here and abroad. Thus we may refer in particular to the elaborate work of Dr. GRIESSMAYER on the proteids of the various cereals, legumes, and oleaginous seeds, and to Dr. G. RUPP'S researches on foods; to Dr. BURIAN and Dr. SCHUBS investigations on the formation of nuclein in the body; to Dr. KUTSCHER'S investigations in regard to the first products resulting from the digestion of albumen; to Dr. GEELMUYDEN on acetone, diacetic acid, and other products of animal chemistry; to the researches of Dr. THESEN on isokreatinin, of Dr. SCHUTZEN on the metamorphosis of albuminous compounds in living plants, and many other articles distributed in various journals, which severally deal either with the nature or the composition or the metamorphoses of food.

The experiments of Dr. VAUGHAN HARLEY on the breaking up of fat in the alimentary canal are of interest as showing that the stomach is capable of splitting up neutral fat into free fat acids and glycerine and that free fat acids are to some extent capable of finding alkalies in the stomach itself wherewith to form soaps. Both these changes are observed alike in normal dogs and in dogs from which the pancreas has been removed. The fat-splitting action takes place actively in the intestines even in the absence of the pancreas so that the quantity of free fat acids and of soaps in the large intestines is not materially different in normal animals and those destitute of a pancreas. The experiments of Mr. MOORE and Mr. ROOKWOOD seem to show also that a large proportion of the fats ingested are absorbed as dissolved fatty acids the remainder being taken up in the form of soaps, the proportion absorbed in the two conditions varying with the animal. The effects of ablation of the pancreas in birds have been studied by Dr. W. KAUSCH with the result that the animals after becoming lean die in less than fifty days, that the blood contains at first more sugar and then less, and that the urine contains none. In dogs glycogen entirely disappears. The development of the pancreas has been worked at by LAGUESSE, of the liver by HAMMAR, and of the pancreas and liver by BRACHET. The presence of the liver has been demonstrated by MM. E. HÉDON and C. DELEZENNE to be requisite in order that the intravenous injection of peptone should exert its anti-coagulating power, since if the vena portæ be connected with the vena cava directly no such influence is observed; there was however great diminution of the blood pressure. Two new pigments have been obtained from the bile by MM. DASTRE and FLORESCO which occupy an intermediate position between bilirubin and biliverdin. The experiments of Dr. A. L. GILLESPIE show that the contents of the alimentary canal in the dog and calf as well as probably in man are acid throughout, the acidity being due to acids formed in part by micro-organisms acting on the constituents of the food, in part to hydrochloric acid in combination with proteids and proteid derivatives and in part to acid salts. There appear to be two classes of bacteria—those which occasion an acid reaction and which are usually unable to liquefy gelatin and those which lead to an alkaline reaction and are capable of liquefying gelatin. These two classes are antagonistic; if the acid forms predominate there are but few putrefactive changes; if the alkaline there is much disposition to putrefaction.

M. E. CYON believes he has discovered a new function discharged by the thyroid gland, for, finding that iodine exerts a paralysing action on the depressor and vagi nerves and therefore upon the heart, he has ascertained that it is withdrawn from the circulation in the thyroid gland and enters into the formation of an organic compound to which he has

given the name of iodothyrin. In addition he remarks that the thyroid gland is an organ which, being situated on the carotid arteries just before their entry into the skull, protects the brain from the sudden afflux of blood acting like a secondary current. Mr. S. VINCENT, from his observations on the comparative physiology of the suprarenal capsules, has satisfied himself that suprarenals of some sort are probably present in most if not all vertebrate animals, and from many experiments of the intravenous injection of the medullary substance of the adrenals of fish he found very striking evidence of contraction of the arterioles throughout the body, and he believes that the effect of the active principle upon the arterioles is due to a direct action upon the muscular tissue of the blood-vessels and is not in any way connected with its action on the central nervous system. The secretory activity of the skin has been the subject of inquiry by Mr. BARRATT who finds the proportion of carbonic acid gas eliminated as compared with watery vapour to be one to two hundred for the upper limb, varying to some extent with the temperature and the degree of fulness of the vessels of the part. The toxic effects of human sweat which have been alternately admitted and denied have been demonstrated by M. S. ARLOING to be undoubtedly well marked when injected into the veins of dogs and rabbits, the effects on the blood in producing hypoglobulin, on the heart in reducing the force and frequency of its action, on the respiration in rendering it feeble, shallow, and hurried, on the intestines in causing vomiting, pain, and diarrhœa, and on the nervous system in exercising a depressing influence on its action, being very distinct.

The observations of Mr. A. SUTHERLAND on the temperatures of reptiles, monotremes, and marsupials carried on in Australia are of great interest, showing that the lowest vertebrata resemble the reptilia to which their organisation presents so many points of analogy in their heat-producing faculty. The temperature of the platypus, for example, in cold air may fall to 24·8° C. and of the echidna to 22° C., whilst that of the latter exposed to a hot sun rose to 36·6° C.—the temperature, in fact, varying just like that of a reptile with the temperature of the air. The temperature of marsupials is much more uniform but still may vary several degrees with the external medium. In the higher vertebrata it is nearly constant.

Dr. WALLER has delivered at the Royal Institution a set of lectures in which he gives the results of his observations on the causes modifying electrotonus and shows that both the anodic and cathodic electrotonic currents are temporarily abolished or at least are materially diminished by raising the temperature of the nerve to about 40° C. He has also very clearly and beautifully shown the regular and typical action of carbon dioxide on nerve, a subject of great interest in regard to the function of respiration and for which he has been awarded the Prix Parkin of the Academy of Sciences of the Institute of France. Professor SHERRINGTON has done some good work in mapping out the areas of distribution of certain sensory nerve roots, the sensory nerve roots on which he experimented being those extending from the fifth cervical to the lower end of the brachial region and upon those of the fifth cranial nerve. He has also made some interesting observations on some peculiar cataleptoid reflexes that can be induced by appropriate stimulation in monkeys from which the cerebral hemispheres have been removed. Dr. STEINACH, an able physiologist, recently endeavoured to show that efferent fibres proceed to various parts of the viscera through the posterior roots of the spinal nerves. The subject has been re-investigated by Mr. A. J. HORTON SMITH who finds that there are indeed efferent fibres in the posterior roots of the spinal nerves in some frogs but that these fibres are distributed not to the viscera but to the skeletal muscles. MM. MORAT and BONNE on experimental and histological grounds, as well as from results obtained by the method of degeneration, have also arrived at the conclusion that there are centrifugal fibres in the posterior roots of the spinal nerves distributed to the lower limbs which have their trophic centres in the spinal cord. The nerves particularly examined were the sixth and seventh lumbar nerves and the first sacral in the dog. Some of the centrifugal nerves referred to were vaso-dilators, so that vaso-inhibiting fibres emerge from the cord both by the anterior and posterior roots of the spinal nerves. The reflexes which start from the peritoneum and which closely resemble those of the condition known as shock have been shown by MM. GUINARD and TIXIER to occur even in animals that are deeply anæsthetised. The force and frequency of the heart's action are reduced and the respiratory acts are accelerated. The reflex effects are more strongly and quickly accentuated in cases where the peritoneum has been previously inflamed.

Dr. PAGE MAY has investigated the segmental representation of movements in the lumbar region of the spinal cord, and shows amongst other facts that any reflex centre derives its chief afferent impulse from a nerve root entering the cord about two segments higher. Dr. FERRIER in association with Dr. W. A. TURNER has endeavoured with much success to follow by the Wallerian method of degeneration the paths by which impressions of general and special sensibility are conveyed to the cortex of the brain. The Lumleian Lectures at the Royal College of Physicians of London were delivered by Dr. BASTIAN who discussed with great originality and research some problems in connexion with aphasia and other defects of speech. The sympathetic system of nerves has been studied by Dr. C. H. HUBER. Dr. RISIEN RUSSELL has continued his investigations upon the origin and destination of certain afferent and efferent tracts in the medulla oblongata and has satisfied himself by the degeneration method that whilst paths derived from the spinal cord can be traced directly to the cerebellum, no direct path can be traced from the cerebellum to the spinal cord. There is, however, he has shown, an indirect path which was formerly regarded as a sensory tract passing from the medulla oblongata to the cerebellum but which is in reality a path from the cerebellum to the special group of nerve cells in the medulla known as Deiters' nucleus; from this another tract of fibres originates which can be traced throughout the whole length of the spinal cord and which becomes connected with the anterior cornu of the same side and to a less degree with that of the opposite side. An important contribution to our knowledge of the structure of cross striated muscle has been made by Dr. W. MCDOUGALL, who also advances a suggestion as to the nature of its contraction.

In embryology the curious experiments of Mr. WALTER

HEAPE deserve mention. The uterus of one variety of rabbit was employed as a medium for the growth and complete fœtal development of fertilised ova of another variety of rabbit. Thus ova obtained from an Angora doe rabbit inseminated thirty-two hours previously by an Angora buck were inserted into the Fallopian tube of a Belgian hare doe inseminated three hours before by a buck of the same breed as herself. In due course the Belgian hare doe littered six young four of which were Belgian hares while the other two were Angoras. Both sets were true-bred.

The observations of Dr. BOTTAZZI on the oscillations of tonus in various forms of muscle have an important bearing on the physiology of muscular contractility, for they seem to show that in muscular organs in which the tissue has not undergone a high degree of differentiation the sarcoplasm must be regarded as the really irritable and contractile substance conferring upon it the automatic and rhythmic properties In the skeletal muscles the sarcoplasm is represented by the singly refracting substance which alone possesses the power of transmitting excitation, whilst the doubly refracting and more highly differentiated substance, though it can contract swiftly and vigorously on the application of a stimulus, is yet destitute both of automaticity and rhythmical power.

Two comprehensive treatises, one on Anatomy and one on Physiology, are in course of publication. The former, entitled the "Handbuch der Anatomie," is edited by Dr. KARL VON BARDELEBEN and is to run to eight volumes; seven parts have been already published. The latter is the "Dictionnaire de Physiologie," by M. RICHET, of which two volumes have been completed. Lastly, Professor MINOT has published a large and important book on Human Embryology, which presents in a readable form all that is definitely known up to the present time on this subject.

Anæsthetics.

The year just coming to a close is the fiftieth anniversary of the introduction of chloroform as an anæsthetic and the occasion was duly honoured by the Society of Anæsthetists with a conversazione at which an interesting oration on the progress of our knowledge of anæsthetics was delivered by the President, Dr. DUDLEY BUXTON. Professor SIMPSON gave an address in Edinburgh in commemoration of the first use of chloroform in midwifery by Sir JAMES Y. SIMPSON. In Tokio, also, the jubilee of anæsthetics was marked by a special meeting and an address by S. SATO, while ISHIGURO spoke of the history of the uses of anæsthetics in Japan.

Many valuable and voluminous papers on anæsthetics have appeared during the year notably one in which HILL carried further his research published this year in the *Journal of Physiology* for May, p. 323. He pointed out that the circulation of the blood depends upon the vaso-motor mechanism being intact. The abdominal wall is able to support the veins and so prevents their distension under the hydrostatic pressure of gravity. Muscular contraction during expiration compresses the hepatic and other veins helping to fill the right heart. When the vaso-motor tonus is maintained the splanchnic area abrogates the effects of gravity. In vaso-motor paralysis gravity at once causes accumulation of blood in the abdominal vessels. This leads to anæmia of the brain and the respiratory centre is driven to greater activity. Powerful muscular movements take place and blood again enters the right heart. Contraction of the abdominal muscles limits the outflow from the splanchnic vessels. When both the vaso-motor tonus and the respiratory pump are paralysed the circulation cannot be maintained in the "feet down" position. Chloroform paralyses both these factors of the circulation. No amount of compression of the abdominal veins will produce paralytic distension of the heart. Both chloroform and asphyxia will do so. HILL finds that such a condition is at once relieved by dropping the patient into the "feet down" position, as the blood at once flows from the right heart by the force of gravity. The teaching of physiology thus has a practical value and tells us that vaso-motor paralysis is a danger to be looked for and provided against as well as the always accepted danger from respiratory paralysis—a condition which HILL finds may arise both from anæmia of the brain centres as well as from accumulation of the drug. In the former case the failure of respiration is secondary to the primary cardiac failure.

WOOD and CARTER[1] undertook a research upon somewhat similar lines and came to rather different conclusions. The fall of arterial pressure, they think, does not, unless very profound, affect the respiratory centre. They admit that if the fall is extreme the respiration will fail, but not otherwise. At first excessive fall of pressure stimulates the vaso-motor centre. The circulation recovers itself more slowly after ether than after chloroform. Ether as well as chloroform may cause death some hours after the administration has been discontinued and even after consciousness is present. They regard the effect of chloroform as being more a drug effect than one the result of vaso-motor influence; and they further think that the after-depression of ether is more severe than that of chloroform. It seems probable, however, that these findings are the result of a fallacy, for they worked with excessive doses of ether when compared with those of chloroform. HARE[2] contends that chloroform kills by vaso-motor paralysis. He advocates the use of atropine, bandaging the extremities, compression of the abdomen, and inversion in the event of syncope. SCHLEICH, if we are to accept the evidence of MADUBO,[3] has suggested a new and valuable method. His theory is that the anæsthetic should have a boiling point as near the body temperature as possible. He has accordingly made three mixtures which have boiling points respectively of 38° C., 40° C., and 42° C. by combining chloroform, ether, and petroleum ether (benzine). The first mixture when inhaled causes a light and transient sleep, the second and third greater and greater depth of anæsthesia. The patients are said to be spared all or most of the after-effects of narcosis. No doubt so careful an observer as SCHLEICH has made sure of his ground before he has allowed publication. MEYER (New York) also has employed the method of SCHLEICH for general anæsthesia and speaks of its value. It obviates cyanosis, bronchial troubles, and, it is said, does not affect the heart as much as chloroform.

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[1] Journal of Experimental Medicine, March, 1897.
[2] New York Medical News, March, 1897.
[3] A New Method of General Anæsthesia, Medical News, New York, November, 1897.

An attempt has been made[4] to trace a causal relation between the temperature, the dampness of the atmosphere, and the death-rate under anæsthetics, but it must be confessed that the views enunciated are more theory than proved fact. The subject of anæsthetics in obstetric practice has received considerable attention, several papers having been read. BALLANTYNE draws attention to the fact that the physiological condition of parturition is one marked by hypertrophy of the heart, while the constant contraction of the abdominal and other muscles during labour helps to maintain the circulation. Blood-pressure is thus kept up and even increased and the respiration is excited. The results of DOENKOFF working with SCHATZ'S toko-dynamometer show that although deep chloroformisation does lessen the uterine contractions ordinary narcosis has no effect whatever in that way.

WALLER has carried further his important research work commenced some time back and dealing with the behaviour of detached nerve when exposed to the vapours of various anæsthetics. Prolonged series of action-currents caused by tetanisation at regular intervals exhibit no diminution—i.e., nerve is practically inexhaustible. When the nerve is exposed to the anæsthetics, ether or chloroform, the active currents are temporarily suppressed—i.e., the anæsthetics temporarily abolish excitability. Chloroform causes more prolonged suppression than ether and the suppression is finally absolute—i.e., no recovery takes place. WALLER has come to the conclusion that the relation of safety of these two anæsthetics is as one to seven—i.e., chloroform is seven times more deadly to nerve-tissue than is ether. The clinical evidence upon this point is usually taken to show that for every one death under ether thirteen under chloroform take place. There seems no reason, however, to regard these figures as necessarily discrepancies, since in the first place the clinical statistics are far from being exact, while there must be obvious differences between the behaviour of detached nerve and the nervous system as a whole. WALLER'S conclusions led him to what he regards as "the chloroform paradox." If, he says, chloroform is a dangerous agent it should only be used in exceptional cases, but if it is as safe as ether, which he denies, any deaths which take place under it ought not to occur and the persons who are responsible for them must be held to be guilty of culpable carelessness. WALLER further examined other bodies with regard to their action upon nerve: 4 per cent. carbon dioxide increased nerve excitability; in larger quantity caused it diminution or abolition followed by augmentation—i.e., it behaves like ether. Oxygen, nitrogen, hydrogen, nitrous-oxide, and carbon monoxide have no effect upon the nerve currents. In reference to the action of carbon-dioxide WALLER points out that the danger of asphyxial states during the giving of chloroform lies not in the presence of an accumulation of carbon dioxide but in the accumulation of the chloroform itself. L. GUTHRIE[5] reviewing the subject of Chloroform Narcosis in Children, finds that children, as far as his experience goes, are affected in precisely the same way as adults and are therefore quite as liable to the accidents associated with chloroform. Deaths of very young children are perhaps less common than is the case with adults, but it is so simply because children are more easily brought round after over-dosage than adults. Their chest walls are more resilient and their hearts are not as a rule affected by fatty or other degeneration and hence they respond more effectually to artificial respiration. He gives his experience upon various points. He has never succeeded in chloroforming a sleeping child without awakening it—an important point in medico-legal practice and one illustrated by a recent case of burglary when several persons were stated to have been successfully chloroformed during sleep by the burglar. The conjunctival reflex is not, GUTHRIE thinks, reliable as a sign of anæsthesia in children. Nor does he accept the eye movements as a guide. A moderately contracted pupil, slowly rolling eyeballs, full, deep, regular, somewhat stertorous respiration, slight congestion of the face and lips, regular slow pulse, and no change of these during the progress of the operation are, he thinks, the only reliable signs upon which it is safe to rely. GUTHRIE also insists that the degree of anæsthesia should be varied accordingly as the different steps of the operation are more or less likely to produce shock. At a meeting of the Harveian Society (April 29th) the subject of giving anæsthetics to children was dealt with and several speakers referred to the difficulty of judging when a young child was anæsthetised. It was pointed out that this drawback did not exist in the case of ether and its use for young children was recommended. POLLOCK and WARRINGTON HAWARD urged the use of ether for children many years ago and their experience is confirmed by later workers. The employment of the A.C.E. mixture has again been advanced as a useful method in the case of children and others advocate it both for adults and children as a means of inducing anæsthesia, while that condition is maintained by the inhalation of ether well diluted with air. CLEMENT LUCAS drew attention to the possible source of infection arising from patients inhaling anæsthetics from a dirty facepiece. He believed that pneumonia occurred from this cause. The challenge thus given was taken up by several anæsthetists who discussed the subject at a meeting of their society in March. It was pointed out that pneumonia was a not uncommon complication of surgical procedure in the days before anæsthetics came into use. At the present time such cases were very rare and were probably not traceable to the anæsthetic at all. SILK points out that in the years 1894 and 1895 out of 5000 cases published in hospital reports only 13 cases of pneumonia are noted. All these except one were of septic origin. PRESSCOTT, of Boston, had met with 3 cases of pneumonia out of 40,000 etherisations. Further, both ether and chloroform are destructive to bacillary life. Again, nitrous oxide gas, which is the most commonly given anæsthetic, is never the cause of this disease. With regard to the question of pneumonia following the use of ether WITNEY has found that the pneumonia which occurs is not a peculiar form of the disease, the ordinary pathogenic organisms are present, and the disease following the normal course. STEINBERG holds that the pneumococcus is normally found in the mouth. WITNEY further suggests that the prolonged use of ether may lower the vitality of the epithelium and enable the organism to exert a specific action. As a prevention he advises that the mouth of

[4] Evans: Medical Record, June, 1897.
[5] Clinical Journal, March, April, 1897.

the patient and his nose and pharynx should all be carefully sterilised before the anæsthetic is given.[6] It is of no small interest to find that two observers, LEMOINE and GALLOIS, have employed ether both taken internally and hypodermically for the treatment of uræmia and nephritis and have met with success. If their results should be confirmed it may prove that the action of ether is after all not so deleterious as has been held by some. VON LERBER[7] has examined the condition of the blood after ether has been inhaled with the following results. In 101 cases the blood was examined and the hæmoglobin was in the majority of instances unaltered, the corpuscles were found to be but little changed either in number or in appearance although some leucocytosis was present. Spectroscopic examination of the urine showed no increase of the urobilin. He concludes therefore that ether does not exert any deleterious effect upon the blood. The statistics of GURLT for the year are of interest. They comprise 58,769 cases. Of these 27,029 refer to the use of chloroform with 29 deaths; 19,856 to ether with 3 deaths; 5000 to Billroth's mixture (chloroform, ether, and morphine); 1000 to brom-ethyl; 600 to ether-chloroform with no deaths. The figures for seven years are: 327,500 cases with 134 deaths—i.e., 1 in 2444; and 1 death in 2039 from chloroform.

The Mirror of Hospital Practice.

We have been able during the past year to put before our readers in this department of THE LANCET records of a large number of extremely interesting cases which have been under treatment in the hospitals both at home and abroad and they represent graphically the progress of medicine and surgery in some of its latest manifestations.

The value of diphtheria antitoxin is so well established that we have not thought it necessary to record in the Mirror of Hospital Practice any instances of its employment except in one case of diphtheritic conjunctivitis, but with tetanus antitoxin the case is far otherwise. The disease itself is rare and so our opportunities of using the antitoxin are not so numerous as in the case of diphtheria. In each of the four cases we have recorded the patient was a boy; in two the spasms did not come on for a long time after the infliction of the wound; in one of these it was twelve days and in the other fourteen days. It is generally recognised that the longer the period of incubation the less severe is the attack and therefore the fact that the patients both recovered cannot be considered to be positive proof that the antitoxin was the cause of the recovery, especially as in one of the cases the wounded part was also treated with a bath of a solution of the red iodide of mercury; in the two other cases the patients showed symptoms more quickly after the injury, but these also recovered. In all four cases chloral was used and its value symptomatically in controlling the fits was obvious. There are several morbid conditions due to the entrance of streptococci into the blood and their rate of mortality is very high; the introduction of the anti-streptococcic serum raised great expectations as to its curative value, and to some extent these expectations have been confirmed by experience. We have published notes of four cases of the use of this serum; in two cases the disease was ulcerative endocarditis; in one of these the patient, though for a time apparently improved by the injections, ultimately died and streptococci were found in the vegetations at the necropsy; in the second case of endocarditis the symptoms and signs were very characteristic, but no bacteriological examination of the blood was made until sixteen days after the commencement of the serum treatment and then no organisms were found; this patient recovered. The two other cases in which the serum was employed were cases of pyæmia with involvement of joints; in one the pus from a joint gave a pure culture of streptococci and the patient died, apparently not having been benefited in any way by the injections; in the other case of pyæmia there was no bacteriological evidence of the presence of streptococci, but the injections were followed by recovery; in one point this case was especially noteworthy, the pyæmic joints completely recovered after having been treated by incision, flushing, and drainage.

The pancreas was at one time rather neglected pathologically, but it is now recognised that disease of the organ is not very rare, but the diagnosis is frequently extremely difficult. The symptoms in acute cases bear a close resemblance to those of intestinal obstruction. We have recorded three cases of acute pancreatitis; in two of these extensive hæmorrhages were found into the substance of the pancreas at the necropsy. The third patient recovered, but the symptoms were very characteristic and there can be practically no doubt that the case was one of acute pancreatitis. A case of pancreatic cyst was recorded in which the cyst appeared to be due to the pressure exerted by a gall-stone in the common bile-duct.

Recovery after traumatic rupture of the diaphragm and escape of the stomach into the pleural cavity is exceedingly rare; we have recorded a case in which the diagnosis seems quite certain. A boy, five years old, was knocked down by a heavy iron gate falling on him; he was much collapsed and cyanotic and was given some brandy and water. The left side of the chest was almost motionless and tympanitic in resonance; it was at first supposed to be a case of pneumothorax, but an exploring needle passed in the fifth left interspace behind drew off brandy and water instead of air. When he was given liquids to swallow distant metallic sounds could be heard in the chest. The physical signs did not change, but he recovered so that he was able to get about without much dyspnœa.

Among other interesting surgical and medical points of all sorts which have been illustrated during the year by this department of our work we may mention the following: Four cases of "typhoid" abscess of the liver show the chief varieties of the condition; in one complete adhesion had formed between the liver and the abdominal wall over the abscess, so that the operation of evacuating the contents was quite simple; in the three other cases the abscesses were emptied by incisions passing through the pleura and they exemplified well the difficulties and dangers of trans-thoracic hepatotomy. When at the necropsy of a case diagnosed as typhoid fever no intestinal ulceration was found it was formerly usually assumed that the diagnosis was mistaken, but the serum test afforded a satisfactory proof in a case we published that the disease had really been typhoid fever though no intestinal ulceration was present. In

[6] Boston Medical and Surgical Journal.
[7] Inaugural dissertation, Basel, Schweiz.

cases of injury to the spinal cord a knowledge of the exact lesion present would be invaluable in deciding the question whether an operation should be undertaken or not and in a case in the Mirror careful observations of the symptoms made it clear that there was a hæmatomyelia and so prevented a useless laminectomy. The diagnosis was confirmed by the post-mortem examination of the body. The trans-peritoneal method of ligature of the iliac arteries is becoming more extensively practised and the case we published in which the external iliac artery was tied for aneurysm at the junction of the external iliac and femoral arteries showed that in such a case the trans-peritoneal operation was much easier than the older operation. Of course there is the additional risk of septic peritonitis, but this should be very small if ordinary care be taken. It would be thought that removal of many inches of the great sciatic nerve would lead to so extensive a paralysis of the muscles of the thigh and leg that walking would be impossible, but we have included in the Mirror the notes of a case in which, though nearly the whole of the sciatic nerve was excised for a sarcoma affecting it, after a few weeks the patient, a young woman, could walk without any help. The power of flexing the knee was due to the sartorius.

Fracture of the roof of the orbit by a stick or a similar body is not rare, but death usually ensues; we have, however, published a case in which a joint of a fishing-rod penetrated the inner part of the right orbit and fractured the orbital plate of the frontal bone. The wound was enlarged but no loose pieces of bone were felt. As the patient did not improve and had a high temperature four days later the frontal bone was trephined and the dura mater having been punctured some fœtid pus escaped. The patient recovered completely. This case is a good proof that these punctured wounds of the orbit should be treated like any other septic punctured wounds—that is, they should be laid open, cleansed, and drained.

The Public Medical Services.

The year that has passed has been full of stirring and memorable events, especially as regards our Indian Empire. What with war, plague, pestilence, famine, and earthquake India has been sorely tried. There remains indeed little if anything that could be added to the list of catastrophes, natural and political, that have befallen that country. The widespread revolt of the border tribes on the north-west frontier has given rise to a large military expedition for its suppression. Taking the frontier tribal war as that which at the present moment most vividly impresses itself upon the public imagination, what do we see? The inimical conditions of climate, weather, and geography have been powerfully opposed to the Indian army whilst campaigning in a comparatively unknown and most inhospitable country. It may be safely said that the expeditionary force has encountered such difficulties and dangers and been exposed to such privations and hardships as probably no European army of the present day has had to encounter. The losses which the Anglo-Indian army have sustained have in the aggregate been deplorable and it speaks volumes for the great bravery and steadiness of the troops that these have not been greater and that no serious disaster has occurred under such circumstances as the fierce and sudden attacks to which the rearguards of the different columns have been repeatedly exposed. The officers and men of both the British and native armies have behaved magnificently and their fortitude as well as their gallantry have been conspicuous. As medical journalists we may proudly point to the conduct of the medical officers. They have shared all the dangers and hardships of the campaign, in addition to those of their own calling, and it may be truly said that they have acquitted themselves well; many of them have greatly distinguished themselves by their gallantry, coolness, and devotion to their duties. The medical service in this exceptionally trying campaign has shown itself efficient: the hospital arrangements have been good and the succour and transport of the sick and wounded have often been carried out under the most difficult conditions. We are not concerned with questions of policy, but we may nevertheless state that it is quite inaccurate to represent the latest movements of troops as a retreat, for it was nothing of the kind. The preconcerted plan of the campaign has so far been carried out. The Anglo-Indian forces have penetrated and traversed the enemy's country in the directions originally intended and have returned to the Khyber, the pass of which will now be reopened. One brigade will remain at Jamrud and another at Bara fort and in the Bara valley. It was known before the expedition started that it would be impossible to occupy advanced positions during the winter and it was never proposed to do so. But the invasion of the Afridi country has, it must be confessed, failed to bring about the submission of the tribes up to the present time.

We need only refer to the Greco-Turkish war to remark that it was a disastrous one for Greece and has greatly rehabilitated the power and influence of the SULTAN of TURKEY. A number of medical men and nurses from this country proceeded to the scene of warfare. There have also been military operations in North Africa—Egypt and the Soudan—which have still to be completed during the ensuing year, as well as in other parts of the African continent; to the medical arrangements for these we have from time to time referred. The medical element has of necessity played a more or less prominent part in all these expeditions and it may be legitimately added that it has never failed in the performance of its special duties. Whether we turn to our military operations in the Soudan or to the present terribly difficult campaign on our Indian frontier the sanitary, medical, and hospital transport arrangements will contrast very favourably with those of the French in their Madagascar expedition.

Returning to India, however, we regret to say that the plague continues and is by all accounts spreading in that country. It is a very serious matter for the Indian Government, following as it does in the rear of the famine. The most active measures for its repression are being enforced; the officers of the medical services in India have been very hardly worked and have done excellent service during the epidemic. They have been well aided by members of the native profession and others in that country. The India Office appears to be fully impressed with the responsibility of the situation if we may judge from the number of medical men and nurses the authorities have sent out to India for special service during the epidemic of plague.

The health of the army in India has, as it was bound to do, attracted a large amount of attention, for the terrible extent and increasing prevalence of venereal disease in that country is a scandal which seriously impairs the physical efficiency of the European force and even threatens to endanger the safety of our Imperial sway in that country. The lamentable state of things brought to light by the report of Lord ONSLOW'S committee created a great impression. Lord GEORGE HAMILTON—strongly backed by the medical profession, the press, and the force of a more enlightened public opinion—has extended the powers of the Indian Government for dealing with this evil. Whether the steps which have already been inaugurated for its repression are adequate or not still remains to be seen. The question is one of great urgency, but, it must be confessed, of great difficulty also. The most fatal disease among the European troops serving in India is enteric fever and it seems to be increasing in prevalence. It is understood that the Indian Government have applied for Professor WRIGHT, of Netley, to proceed to India in order to introduce his system of a protective "vaccination" against that disease. The amount of sickness and mortality caused by enteric fever in India during the past year has been lamentable.

We wish that we were warranted in stating that members of the Army Medical Department were satisfied with the position in which they find themselves at the end of the year 1897, but this is clearly not the case. The War Office has redressed many of their grievances, but the dearth of candidates for the medical service still continues and is likely to continue until the real cause is dealt with. The medical officers are not satisfied with their rank and position in the army. They desire to see their service constituted as a Royal Medical Corps officered by themselves. There have been numerous rumours about an immediately forthcoming new Royal Warrant for the Medical Department, but it has not yet appeared. We have so often dealt with the subject that there is no need to dwell upon it now. During the next session of Parliament the question of the increase and reorganisation of the army will have to be thoroughly debated and threshed out in the House of Commons and we shall then learn what the Minister for War proposes to do, for something will have to be done. The Naval Medical Service, which is differently situated to the army in many respects, appears to be contented with its position if we may judge from the relative absence of all complaints on the part of naval medical officers and the number of candidates who present themselves. The Indian Medical Service, which is not altogether free from grievances, is a much more popular service than the Army Medical Staff and continues to maintain a good competition for its appointments. We may incidentally remark that the first dinner of members of this service in London was instituted and took place in 1897 and that the Minister for India was present at it. We have to congratulate Surgeon-Major-General JAMESON, C.B., the present Director-General of the Army Medical Department, on his appointment as Honorary Surgeon to the QUEEN in place of the late Sir WILLIAM MACKINNON, K.C.B. During the past year there is a lamentable record of deaths among officers of the public medical services. We may mention those of Dr. MOUAT, Deputy-Surgeon-General VANDYKE CARTER, and Surgeon-General CORNISH of the Indian Medical Service, and of Surgeon-General READE, V.C., and of a very notable personality the late Director-General, Sir WILLIAM MACKINNON, K.C.B., of the Army Medical Staff.

Chemistry.

The field of inquiry in chemical science this year has been somewhat broad. Alchemy has been revived and hot has been the pursuit after a solvent for carbon which shall yield on evaporation or solidification carbon in the pure crystalline form of the diamond. Professor CROOKES, who has recently paid a visit to the Kimberley fields, is led to think that iron at a high temperature and under great pressure will serve, and has served probably in nature, as the long sought solvent for carbon and will allow it to crystallise out on cooling in the form of diamond. This view is confirmed by experiments in the laboratory, in which carbon has been dissolved in iron at the high temperature of the electric furnace, the mass on cooling actually yielding microscopic diamonds of beauty and lustre equal to the natural gem. The transmutation of metals is said to have been effected by simply applying enormous pressure and conducting the operation in extreme cold. The announcement came from America, where it was stated that a chemist had converted silver—Mexican dollars he preferred—into a mixture containing a large proportion of gold. The product known as "argentaurum" is advertised for sale as a curiosity at the price of 75 cents. per gramme. "It may be had in sheets." A mixture of gold and silver at this price is a costly thing. Pure gold is cheaper, while there is no guarantee, it seems to us, of "argentaurum" having actually been produced in the way described. Experts have of course rejected this announced achievement, but the case is of interest in showing that alchemy is still considered a practical possibility. PROUT'S hypothesis, which holds that the elements are different elaborations of the same primordial substance, is largely responsible for this belief and curiously enough just at this time many researches on the rare elements are tending to establish the correctness of the materia prima theory. Correct as the conjecture may be, the agencies which effect the translation of one element to another are unknown to us and possibly will remain for ever unknown, or at any rate beyond our power to employ. The elaboration of seventy different elements from the same elementary substance as starting point is probably the work of ages and ages just as the development of man has been. Mendeléff's beautiful periodic law leads again to the conclusion that the elements are after all entities of the same elementary body. Recent researches have shown more especially with the rarer elements that the atomic weight, which is a function of the atom, appears in certain cases to waver between two values as though doubtful as to what properties to exhibit and therefore as to what element it shall be.

Professor RAMSAY has continued his researches on the bodies argon and helion, but beyond what is already known he has found it difficult to declare any new properties except of a negative character. He has found, however, that helion may apparently be split up by means of diffusion into two bodies of varying density. The only widely-distributed element that has until quite recently resisted all attempts

at liquefaction is that remarkable element fluorine, but not only has it now been obtained in the free state but liquefied into a clear, sherry-coloured liquid. Thus the nearest approach to the properties of the universal solvent of the alchemist has been realised, for fluorine attacks at ordinary temperatures all known substances. But, as Professor MOISSAN and Professor DEWAR have recently shown, fluorine, which has the most powerful chemical activity of all the elements, may be held in abeyance by preparing it at exceedingly low temperatures. Caoutchouc, however, takes fire on the surface of the liquid thus obtained, running about like sodium on water and giving a very intense light. Further developments of this achievement will be watched with considerable interest. In the meantime considerable credit is due to Professor MOISSAN and Professor DEWAR for successfully accomplishing a most hazardous experiment. We have often expressed wonder that in Professor DEWAR'S classical experiments on the liquefaction of air he has not encountered argon and perhaps helion seeing that for the purpose of liquefaction a very large volume of air is dealt with. Apparently failing to separate argon or helion in air Professor DEWAR soon detected an impurity, if we may so regard it, in a sample of gas evolved from the Bath spring. He found it possible by liquefaction to separate helion as gas when it is only present to the extent of a thousandth part. By this means it is probable that a good yield of helion will be obtained. In this experiment apparently no argon was separated so that the conclusion is that argon liquefies simultaneously with the air.

A note on the distribution of carbonic acid in the air has been made by Professor CARLETON WILLIAMS. Contrary to what is commonly accepted—namely, that the carbonic acid of respiration is equally diffused through the air of a room—this investigator found that the air near the ceiling is generally the worst in this respect. In other words, the distribution of the carbonic acid in the air of an inhabited room is not uniform and as a matter of fact the air near the ceiling of the room, especially if it be not lofty, is as a rule appreciably less pure than the air four or five feet above the floor. The question of the quantity of, and the part played by, ozone in air is an important one and some interesting work has been done in this direction. M. MAURICE DE THIERRY, for instance, has made the interesting observation that the quantity of ozone increases with the altitude. His experiments were conducted on varying heights on Mont Blanc. It is well known that as the altitude increases so does the number of micro-organisms diminish and this after all is what might have been anticipated since ozone cannot exist long where easily oxidised matter occurs, nor is ozone favourable to the existence of micro-organisms. These observations may have an important bearing upon the hygiene and climatology of high altitudes. During the past year we have more than once recorded the important *rôle* played by micro-organisms in the development of quality in many articles of consumption. It has thus been demonstrated that the flavour of tobacco or a cigar is due to the operation of a specific micro-organism and that if the growth of this particular species could be induced a product of constant and agreeable qualities would always be obtained. The probability of this process being adopted on a commercial scale has at least been demonstrated in the case of butter. Thus a species of bacterium has been isolated which may be used with extraordinary success in the production of good-flavoured butter. In this way cultures may be employed which will ripen a cream and produce generally better butter than the same cream ripened in the usual way. This affords an admirable illustration of the fact that in the countless number of ubiquitous microbes we must reckon with friends as well as enemies.

Organic chemistry proceeds apace, although on the score of importance it does not on the face of it appear to have accomplished much this year that is intimately concerned with the advances of medical science. More coal-tar derivatives and synthesised compounds have of course been added to the list of medicaments, most of which have been of the antipyretic type. Much as the continual addition of antipyretics may be discountenanced, yet there is a redeeming feature connected with the enthusiasm of the chemist in searching for new compounds of this order since in so doing he is adding considerably to our knowledge of the constitution of compounds and thus enabling us to remark the specific therapeutic differences existing between compounds of different yet of definite structure.

Public Health.

The year now upon the point of closing has been an important one in several respects which have a bearing on public health. The first six months gave evidence of that continuing decrease in general mortality which has now for many years gone hand-in-hand with steadily increasing measures having for their object the promotion of health and the prevention of disease. But with the third quarter a change set in which conveys some useful lessons. The general mortality underwent a substantial increase and exhibited a distinct excess on the average for a considerable term of years. And not only so, but this increase was mainly due to causes which are everywhere recognised to be largely within the control of efficient sanitary administration. Diarrhœa, diphtheria, and measles were among the essential causes of the heavier death-rate. As regards diarrhœa it may be said that the meteorological conditions were unfavourable and that whenever there is increase of temperature combined with diminution of rainfall there is also an increase in the mortality from infantile diarrhœa. This is true and these were the meteorological circumstances of the third quarter of the year. But they alone cannot cause infantile diarrhœa and until the authorities of our towns and cities learn that so long as they allow the soil on which their populations live to be constantly contaminated by soakage from midden-privies and from leaky drains and by reason of the deposit of refuse and slop-water on the surface-soil, so long are they producing and maintaining a condition of things which needs but some periodically expected meteorological conditions to turn that soil into a breeding-ground for pathogenic organisms.

The increase which was due to diphtheria likewise raises an important question. We have now for some years past watched the change of incidence of diphtheria mortality from rural to urban districts and we find this year that the excess of death from this cause is essentially an urban

matter. No one, for example, can have watched the recent weekly returns of the Registrar-General as regards the metropolis without feeling that the waste of child life which is going on in London is a matter calling for the most careful inquiry. Nearly everyone who is conversant with this subject is convinced that the increase has taken place not only synchronously with, but consequent on, the increasing aggregation of children at the most susceptible age for diphtheria in our elementary schools. Indeed, it is hardly conceivable that so infective a disease should not be increased as the means for personal infection increased. But there are a few persons who are particularly identified with school work who pronounce a different opinion on the subject and whether they are correct or not the matter has become one that should if possible be settled one way or another. If they are correct we are face to face with a nearly inexplicable problem; if they are wrong the attitude they assume is one which tends to promote instead of to diminish the excess of death which year by year we are compelled to witness. Measles has once again exhibited an increase of mortality. This disease is unfortunately looked upon as a necessary accompaniment of infancy and childhood and so long as this is the case so long will it be all but impracticable to do anything effectual towards saving some of the 10,000 or 12,000 children whose lives are annually sacrificed to it. We cannot pretend that isolation in hospital will in the majority of cases be of much avail; but we can look to the elimination from school of children living in houses where measles exists as likely to be of the greatest use if the action taken be systematic and be rendered promptly on the occurrence of the first attacks. To this end alone the notification of measles would seem to serve a really useful purpose.

The end of the third quarter and the beginning of the fourth one brought us face to face with a still more serious matter. It has long been somewhat obvious that the steady decrease in mortality from typhoid fever which has long been in progress in this country was on the wane, if indeed it had not ceased. A principal reason why our progress in this matter has received some check lies in the fact that periodically some of our large water-services become specifically polluted and then the infection is diffused on a wide scale amongst the general body of the water consumers. This autumn we have seen two typical instances of this sort in the occurrences of water-borne typhoid fever in Maidstone and in Lynn. We have already given full accounts of these outbreaks and we do not propose to refer to them in any detail here. But there is advantage in recalling one or two lessons to which such outbreaks give rise. One is that infinitely more care is needed in the selection of sources of water for our urban communities than has heretofore been given to the subject. As a rule, engineering considerations govern the whole matter. If the schemes have their basis in an Act of Parliament powers are conferred whereby vast populations are handed over to companies and other bodies in the matter of their water-supply without the slightest attempt on the part of those who give these powers to make themselves personally acquainted with the risks of pollution that may arise. Then, again, when once a population has been thus handed over to a company, even the sanitary authorities responsible for the health of the communities in question have no rights conferred upon them to watch over the water-supplies, and if they seek to ascertain what is going on at the sources of the supply they are warned off as intruders by the agents of the commercial companies who have acquired a monopoly as purveyors of water. And, lastly, little or no responsibility can be made to attach to these water purveyors when by their failure to take proper precautions they distribute disease and death amongst the consumers of the ware by the sale of which they make a pecuniary profit. These are matters which should receive careful consideration and which should be strongly pressed upon members of our legislature. If this is done then the serious warnings of the now closing year will not have been in vain.

The year 1897 will also be remembered in connexion with the fourth of a series of International Sanitary Conferences. The first three conferences were concerned with cholera; the fourth, which was held at Venice early this year, was concerned with preventing the extension from the east of bubonic plague, whether by sea traffic from India into the Mediterranean or by means of the Mecca pilgrimage. Notwithstanding the panic which prevailed amongst a majority of the people inhabiting the littoral of the Mediterranean the conclusions which were arrived at by the conference, and which were reached on much the same lines as those which had been adopted for cholera, exhibited a further advance in the direction of our English sanitary measures for preventing the importation of infection from abroad. This is a matter for considerable satisfaction; indeed, if nothing else be considered, yet it must be remembered that many thousands of pounds will be saved to our shipping by the single point which was attained of allowing vessels from India to pass at once into the Suez Canal and the Mediterranean, although they have not completed the incubation period of plague since leaving the last infected port. One other point deserves mention—namely, that for the first time in the history of our Indian Empire the Government prohibited the departure of pilgrims for Mecca and that they did so with great success. The conference was one of great importance to this country and technical delegates were sent out to represent the home Government, the Indian Government, and the Army Medical Service. With regard to the prospects of plague in India itself it is difficult to speak with any assurance. The conditions which exist in in the native parts of some of the large Indian cities and which have unfortunately grown up under European control are such as to lend themselves largely to the spread of a filth disease of this sort and it is this which presents one of the greatest difficulties which has to be contended with by those who are labouring so diligently to check the further diffusion of the malady. Three cases of plague were imported into the Thames by means of shipping but the disease happily found no means for diffusing itself in this country.

During a considerable part of the year a Royal Commission has been sitting to report on the administrative measures which should be adopted to control the spread of tuberculosis through the use by man of meat and milk as articles of diet and we learn at the last moment that a

considerable portion of the final report has been discussed by the Commission who are expected to report finally early in the ensuing session of Parliament. Perhaps the two most pressing matters to be dealt with are, firstly, how best to prevent the milk-supply of our child population from serving as a means for conveying tuberculosis, and, secondly, how far the demand for compensation for carcases and for milch cows seized because they are tuberculous is to be conceded to butchers and dairymen. On these two points it is to be hoped a very definite opinion will be expressed.

We have but little to say on the question of legislation as it affects England and Wales, but the passing of the Scotch Public Health Act which comes into operation on Jan. 1st next is a matter of importance. It will place Scotland much on the same footing in public health respects as England and Wales and we are glad to congratulate Scotch medical officers of health at their success in resisting the proposal to place sanitary inspectors on an equality with themselves in matters essentially involving medical judgment. For England and Wales public health legislation is prospective. It is clear from all that has transpired during the past year that all classes will expect a new Vaccination Bill which shall bring to an end the very grave period of transition into which vaccination authorities have drifted to the danger of the State. It is also likely that both the public and the better part of those concerned in the trade of the sale and culture of oysters will not be content unless some effort is made to free this valuable mollusc from the risk of being sold to the community in a condition involving danger to health and to life.

The General Medical Council.

The year has been eventful and active so far as the General Medical Council is concerned. The wonderful health of the President, Sir RICHARD QUAIN, failed in the early part of the year, but after grave illness he succeeded in presiding at the May meeting. At the November meeting he was unable to be present and requested that Sir WILLIAM TURNER might fill the chair for him. The Council readily adopted this suggestion and Sir WILLIAM TURNER conducted the business with great ability and success. There are several changes in the *personnel* of the Council. Dr. RENTOUL and Mr. BROWN at the May meeting took their seats for the first time after their election as Direct Representatives. Dr. RENTOUL surprised his supporters and his critics alike by a sudden resignation conveyed in a letter to Sir RICHARD QUAIN dated Sept. 1st. The vacancy was filled by the election of Mr. VICTOR HORSLEY. Sir CHRISTOPHER JOHN NIXON, M.D., appeared at the November meeting in the place of Sir JOHN BANKS, K.C.B., resigned. At the end of the late meeting the Council received intimation of the appointment of Dr. JAMES LITTLE as Crown member for Ireland in the place of Dr. WILLIAM MOORE, who had resigned a few weeks before. Another event of the year was the resignation in May of the Registrar, Mr. W. J. C. MILLER, after twenty-one years of good service. His place was filled by the promotion of Mr. HENRY E. ALLEN, LL.B., B.A., previously Assistant Registrar. Mr. ALLEN well deserved the appointment which henceforth is to be an annual one.

Three pieces of work stand out in the history of the Council. The first was the Report of the Education Committee on the standard of preliminary examinations in general education, which will be found in Appendix II. in the November minutes, and the adoption of the following resolution by the Council itself:—

"That the Council intimate to all the examining bodies whose examinations in general education are recognised by the Medical Council as qualifying for the registration of medical students that on and after the first day of January, 1899, no certificate of lower standard than that of the matriculation or entrance and the junior local examinations of the Universities of the United Kingdom will be accepted for registration."

The Education Committee by another resolution is instructed to remove from the list of examinations on Jan. 1st, 1899, those examinations which are of a lower standard than that indicated in the above resolution. Many would approve of a still more sharp raising of the standard; but this, as was shown by Dr. MACALISTER, will suffice to remove certain examinations which pass several hundreds into the study of the profession. There is every prospect that the supplies under this turn of the screw will be ample, and that ere long another turn will be called for.

The next important work of the Council which will make the year somewhat memorable is the issue of a new Notice by the Council on the subject of the employment by registered practitioners of unqualified assistants. Henceforth the use of such persons in the treatment of disease save as *bonâ fide* pupils or as "nurses, midwives or dispensers" in a "legitimate" way will be treated as an offence by the General Medical Council and "may be regarded as infamous conduct in a professional respect"—that is, conduct that may be punished by the Council with removal of the offender's name from the Medical Register. The effects of this action on the part of the Council may be very far reaching. Cases before the Council, at both of its sessions this year, show how extensive the employment of unqualified assistants is still and how little many practitioners in remote districts and even in the metropolis realise that in employing them they are offending against the regulations of the General Medical Council. They will, however, have to realise the fact in future. Every week shows that the public take such unqualified persons seriously, either regarding them as the principal or as having the same legal sanction as the principal. It is felt that in such a state of matters the public and especially the poor are deceived and that even when they are not so the profession itself is compromised by supplying unqualified attendance. We warn practitioners to put the strictest construction on the words of the Notice if they would avoid the annoyance of appearing as offenders under the Medical Acts and even the risk of removal from the Register. We do so the more as there is still some remaining vagueness in the language of the General Medical Council upon which some may presume.

The third event in the work of the Council is the practical completion of the Pharmacopœia. Its value has yet to be tested by criticism and experience. Perhaps the most significant feature in it is the new preparation "Liq. Thyroidei," suggesting a new access of light in the region alike of physiology and therapeutics.

The case of the Apothecaries' Hall of Dublin calls for notice, with the incidental appearance of the Privy Council as the ultimate authority in dealing with medical bodies

whose examinations do not satisfy the demands of the General Medical Council was an interesting development. Though their lordships had to direct the Council to do what was evidently very distasteful to it—viz., to appoint surgical examiners for the Hall—it is satisfactory to know that in doing so they acted, as in other questions, with great deference to the feelings and authority within its own prescribed limits of the General Medical Council. The Council felt bound to erase from the Register at the May meeting the name of one practitioner and at the November meeting the names of three practitioners. Various "medical authorities" under the action of the General Medical Council have been led to consider their own disciplinary duties towards their graduates and diplomates, and though there is still a tendency to shirk these and to throw all the disciplinary work of the profession on the Council some progress has been made. But it is satisfactory to note that the Scottish universities which are large qualifying bodies have displayed a keener sense of their responsibilities in this matter. The Council has instructed its lawyers to commence prosecutions against practitioners who continue to practise after removal from the Register.

The question of Medical Aid Associations was again relegated to a committee which has taken a good departure in attempting by conference with the leading friendly societies through their Registrar to acquaint themselves better with the points in dispute with a view to their adjustment. Only an interim report, to this effect, was presented at the November meeting.

Direct Representation on the General Medical Council.

The friends and the enemies of Direct Representation in the General Medical Council have been much exercised in the course of the year. At the May meeting, as we have said, Dr. RENTOUL and Mr. GEORGE BROWN took their seats for the first time. Dr. RENTOUL naturally was placed by the Council on the committee to consider the Midwives Registration Bill towards which he had displayed such a hostile attitude for many years. Just when it seemed he was to have an opportunity of expounding his views in a way that might influence legislators he suddenly resigned the seat to which he had so recently been elected. A sharp contest for the seat ensued in which it was soon seen that the chances were confined to two candidates, Mr. VICTOR HORSLEY and Sir WALTER FOSTER. Mr. HORSLEY was the successful candidate. The damage done to the cause of Direct Representation by the vacillating conduct of Dr. RENTOUL was considerable. But it has been much repaired by the election of Mr. HORSLEY, who has already shown himself an efficient member of the Council and has announced his intention to again submit himself to election when the five years of his colleagues shall have expired so as to save the Council the expense and trouble of a double election. This action on the part of Mr. HORSLEY is to be commended. The process of a popular election to a professional post is new to the profession. There is no need why it should be distasteful. But clearly once in five years is often enough and we should all like to see it conducted with as few of the arts of political contest as possible. The critics of Direct Representation somewhat rejoiced over the fact that in the end the contest lay between two gentlemen who were consultants. But this only shows the sound judgment of the profession. *Ceteris paribus* it might prefer a general practitioner, but the necessity for the best candidate to be chosen is imperative and if a consultant has special knowledge or capacity for dealing with questions affecting general practitioners it is too wise to insist upon any fine distinctions. It is quite evident that the cause of Direct Representation is to be advanced more by the fitness of the men whom it puts forward than by their exact place in the ranks of the profession.

The British Medical Association.

The year will be memorable in the annals of the British Medical Association as having been signalised by the holding outside the British Islands of the sixty-fifth annual meeting. The strictly business part of the meeting was transacted in London in the month of July, but the scientific and social portions were held in Montreal from Aug. 31st to Sept. 4th. From every point of view this meeting was most successful, although had it not been for the counter-attraction at Moscow the numbers attending it from this side the Atlantic would doubtless have been larger than they were. Those who did go were amply repaid, whilst the welcome they received was of the most cordial and hospitable description. The President, Dr. T. G. RODDICK, in his opening address, spoke of the history of the Association, of Canada and its health resorts, and of medical education and legislation in the Dominion. The Address in Medicine was given by Professor OSLER, of Baltimore, whose former connexion with the McGill University and his English education rendered his choice for this office a specially appropriate one. He dealt with his subject, "Medicine in Greater Britain," in a manner and style that made his address one of the chief features of the meeting. Mr. MITCHELL BANKS, of Liverpool, delivered the Address in Surgery—recalling from old chronicles the life-work of men who illustrated his theme of "The Surgeon in Time of War." The Address in Public Medicine, by Dr. HERMANN M. BIGGS, of New York, was a remarkable exposition of the sanitary organisation of that city and of the gains which have accrued to the public health through the measures adopted. The various sections, eleven in number, assembled in the buildings of the McGill University and the business transacted in them was more than usually attractive, the attendances being extremely well maintained. They were presided over by Dr. STEPHEN MACKENZIE, Mr. CHRISTOPHER HEATH, Dr. E. P. LACHAPELLE, Dr. W. J. SINCLAIR, Dr. D. J. LEECH, Mr. WATSON CHEYNE, Dr. R. M. BUCKE, Mr. E. NETTLESHIP, Dr. GREVILLE MACDONALD, Dr. AUGUSTUS WALLER, and Mr. MALCOLM MORRIS, and in every section special subjects were set down for discussion, as well as the usual readings of papers. Many of these debates excited considerable interest, and amongst those sharing in them were several visitors from the United States whose presence enhanced the value and importance of the meeting. In the Section of Medicine discussions took place on the Dietetic Treatment of Diabetes, on Arthritis Deformans, and on Cholelithiasis; in that of Surgery on Appendicitis and on Kraske's Operation for Rectal Cancer; in Public Medicine on Quarantine; in Obstetrics and Gynæcology on Hyperemesis Gravidarum, on the Operative Treatment of Pelvic Inflammation and Tumours, and on

Uterine Flexions; in Pharmacology and Therapeutics on Insomnia, on the Treatment of Syphilis, and on Diuretics; in Pathology on Serum Diagnosis and on Immunisation; in Ophthalmology on Colour Vision and on Antiseptics in Eye Surgery; in Laryngology on Turbinotomy and on Laryngeal Paralysis; in Anatomy and Physiology on the Teaching of Anatomy, on Anæsthetics, and on the Heart Beat; in Dermatology on Vesicular Skin Diseases. As regards the social side of the meeting the reception accorded to the Association on all hands was of the warmest character, whilst the excursions with which the week closed comprised visits to some of the most interesting parts of Canada, including a trip across the continent to Victoria, British Columbia, which was enjoyed by some of the members through the kindness of the president of the Canadian Pacific Railway Company, Sir W. VAN HORNE. The fact that in the preceding week the British Association had held its annual meeting at Toronto with similar success and cordiality of reception affords further proof of the warmth of feeling towards the mother country entertained in the great Canadian dominion whose welcome to the two associations was gracefully expressed by the Governor-General (Lord ABERDEEN), the High Commissioner (Lord STRATHCONA AND MOUNT ROYAL), and many of Canada's leading statesmen and citizens. Finally, as regards the Montreal meeting we note with pleasure the daily publication of a very complete journal of the proceedings.

We may perhaps add that on this occasion we issued a Special Canadian Supplement to THE LANCET (which was produced wholly in Montreal) containing reports of the addresses, discussions, &c., at the various meetings; and we avail ourselves of this opportunity to gratefully acknowledge the assistance rendered to us by many in its production.

The Prince of Wales's Hospital Fund.

The Diamond Jubilee of HER MAJESTY'S great reign has made her children and her people inventive of schemes for its commemoration. Naturally such schemes in many cases have largely taken the form of funds for the benefit of hospitals or of convalescent homes and conspicuous among these stands out the fund initiated by the PRINCE OF WALES for the advantage of the hospitals of London. His Royal Highness contemplated not only a gift that would immediately reduce, if not remove, the debt which weighs so heavily on the London hospitals, but the initiation of a scheme of annual subscriptions in which whole classes that have hitherto not given to hospitals would become regular subscribers. As the fund is not yet closed it is impossible to say what its exact amount will be, but the sum was £187,000 odd when the first meeting of the Distribution Committee was held on Monday, Dec. 20th. Even the Prince here is only a competitor against others with similar objects and under the same powerful stimulus. His fund may not realise the sum required. But it will doubtless furnish the largest sum for hospitals which has ever been raised in one year. The interest felt in its distribution is equal to that felt in its amount. For the present year the Prince will be guided by the advice of the Distribution Committee of the Hospital Sunday Fund, but the public rely much on the sound sense of His Royal Highness personally and feel sure that he will use his great influence in favour of sound principles of hospital administration.

The Metropolitan Hospital Sunday Fund.

The Metropolitan Hospital Sunday Fund continues to enjoy the confidence of the religious public and places of worship contributing to the collection now number 1800. The total receipts for the year amount to £41,003 13*s.* 1*d.* This sum includes legacies, special donations, and dividends to the amount of £3607 10*s.* 1*d.* The whole sum is less by £5000 than in the previous year. The difference is not perhaps remarkable when the competition of the PRINCE OF WALES'S Fund and other special movements of this historical year are considered. The Council of the Fund has a claim on the gratitude of the profession and of all who have the interests of the hospitals at heart by reason of the step which it has taken with regard to the question of abuses of the out-patient department. It has induced the constituents of the Fund to accept a Rule for the guidance of the Distribution Committee under which it will be a point of "merit" in a hospital having an out-patient department to have "a special and efficient" officer for detecting abuses. Hitherto the Council has refused to deal with this question but it now wisely sees its urgency.

The Benevolent Agencies of the Profession.

The list of candidates of the Royal Medical Benevolent (Epsom) College showed that for six vacancies in foundation scholarships there were forty-two candidates, and that for one vacant pensionership there were twenty-seven candidates. Dr. HOLMAN pleaded powerfully in our columns for a few hundred pounds to assist foundationers of the College who had won university scholarships and were too poor to take them up. The subscriptions and donations for 1896 to the British Medical Benevolent Fund were £141 less than for 1895. The Society for the Relief of Widows and Orphans shows that there are now on its funds fifty-three widows and eleven children of deceased members. The society has an accumulated capital of £97,300. This valuable society is practically open to every registered medical practitioner residing within a radius of twenty miles from Charing-cross. The report of THE LANCET Relief Fund will be published next month. Our experience enables us to testify that there is greater need than ever in the profession for the generous support of its own charities.

The Royal College of Physicians of London.

The conferment of a baronetcy upon the President of the Royal College of Physicians of London was everywhere acknowledged to be a fitting recognition by the Crown of the merits of one of the most highly-esteemed leaders of the medical profession in this country. Sir S. WILKS had the gratification in this his second year of office of admitting H.R.H. the PRINCE OF WALES to the Honorary Fellowship of the College, an event upon which the profession as well as the College is to be congratulated, for it shows how great is the interest taken in medical matters by His Royal Highness. As regards the distinctions conferred by the College during the past year it may be mentioned that the Moxon Medal was bestowed on Sir S. WILKS and the Baly Medal on Professor SCHÄFER. The first award of the Weber-Parkes prize and medal was made to Dr. ARTHUR RANSOME, a second medal being awarded to Dr. P. PATERSON. The Murchison scholarship was gained by Mr. T. B. HERRING, M.B.,

B.Ch. Edin. Several subjects of importance—educational and ethical—have been considered at the meetings of the College. It has been decided to include the subject of bacteriology under that of pathology in the curriculum and examinations; and at the last Comitia a committee was appointed to consider the question of the subject of biology which five years ago replaced that of elementary physiology in the first examination for the conjoint diplomas. On two occasions during the year—and not, we imagine, for the last time—the College has expressed its opinion upon the question of a teaching university for London. The last occasion was that on the introduction of the University of London Commission Bill (1897) into the House of Commons the College passed a resolution in support of it, but the withdrawal of the Bill rendered this action without avail. The question of medical aid institutions was pressed on the attention of the College by memorials from Norwich, Yarmouth, and Portsmouth, but after inquiry the College found itself unable to accede to the request of the memorialists to forbid its Licentiates, Members or Fellows holding such offices or having consultations with those who do hold offices in these institutions. Nor was the College inclined to undertake an inquiry into hospital abuse to which it had been invited by a memorial from the Hospital Reform Association. A valuable and temperate, but decided, report on the question of contagious diseases in the Indian army was presented by a committee of the College and forwarded to the Secretary of State for India. The following were the lectures delivered during the year: The Milroy, by Dr. W. COLLINGRIDGE, on Quarantine; the Goulstonian, by Dr. A. P. LUFF, on the Chemistry and Pathology of Gout; the Lumleian, by Dr. H. C. BASTIAN, on Some Problems in Connexion with Aphasia and other Speech Defects; and the Croonian, by Dr. HALE WHITE, on the Means by which the Temperature of the Body is Maintained in Health and Disease. Dr. PAVY gave a lecture on Diabetes supplementary to his previous Croonian lectures on the subject. Dr. MARKHAM SKERRITT was the Bradshaw lecturer, choosing for his subject Prognosis in Heart Disease; whilst the Harveian Orator of the year was Sir W. ROBERTS.

The Royal College of Surgeons of England.

At the February meeting of the Council of the College the result was announced of the poll of the Fellows which had been taken to ascertain their opinion as to the desirability of granting to the Members representation on the Council. 1150 circulars were sent out, but only 686 valid answers were received; of these 485 negatived the proposal to give direct representation to the Members. Of the minority of 201 who voted in favour of according representation to the Members 42 considered that the representation should be by Members only, 40 by Fellows only, and 119 thought it might be by Members or by Fellows indifferently. This adverse vote has certainly raised a great barrier to the further progress of the Members' claims and the result was a surprise to many, for at the meeting of Fellows in January, 1896, a resolution had been carried by a large majority to the effect that it was desirable to give to the Members direct representation on the Council. However, the inherent moral right of the Members to representation must in the end triumph. The result of the poll of the Fellows was attributed to a lack of impartiality in the "elucidatory statement" which accompanied the questions sent to the Fellows, and this idea was expressed in one of the resolutions brought forward and carried at the annual meeting of Fellows and Members. It may be remembered that in March, 1896, the Council passed a resolution that as they represented "the body corporate of this Royal College and consequently its Members as well as its Fellows" "no further representation of the Members was desirable." At the November meeting of the Fellows and Members Mr. GEORGE BROWN moved a resolution to the effect that the meeting repudiated this claim of the Council and the meeting carried it by 37 votes to 1. No further steps have been taken during the year to advance the Members' claims and it is difficult to see what can be done unless the Fellows again pass a resolution in favour of granting representation to the Members.

One of the most important matters with which the medical world has been concerned during the past year has been the subject of Medical Aid Associations; the harmful effect of these trading bodies on general practitioners is notorious and those medical men who are Members of the College of Surgeons naturally looked to their own College to guide and help them in their difficulties. Memorials were addressed to the Council by bodies of Fellows and Members in various parts of the country. Norwich, Portsmouth and Plymouth, Devonport and Stonehouse, all asked the Council if anything could be done; should Fellows and Members of the College decline to meet in consultation medical men serving under medical aid associations? These and other similar questions were asked. The replies received from the Council can hardly be described as satisfactory. The Council stated that the disciplinary powers provided by Section XVI. of the by-laws did not entitle them to question the legality of Fellows and Members of the College holding the appointment of medical officer to a medical aid association and that they could not endorse the refusal of any Fellow or Member of the College to meet in consultation (particularly in urgent cases) registered practitioners when acting in conformity with their legal rights. They, however, expressed their willingness to consider any evidence submitted to them respecting canvassing for patients, either directly or indirectly, by any individual Fellow or Member of the College with a view to determining whether or not such Fellow or Member had been guilty of a breach of the by-laws. The matter was brought forward at the annual meeting by Mr. W. G. DICKINSON in a resolution asking the Council to make a clear pronouncement that "the acting by qualified medical practitioners as the paid officials of any institutions which tout and canvass for patients is disgraceful in a professional respect and deserving of censure." Though the motion was carried the Council at their next meeting declined to make any general statement, but expressed their willingness to consider evidence relating to any individual case. The Royal College of Physicians of Ireland has expressed its disapproval of its Licentiates accepting appointments to medical aid associations and it is a little difficult to see why the Royal College of Surgeons of England should not do likewise. We believe that in this matter of medical aid

associations the Council could enormously benefit the medical profession and earn for itself the lasting gratitude of the Members of the College.

The case of Mr. R. B. ANDERSON, F.R.C.S., which is now, doubtless, well known to our readers, came before both the January and the July meetings of the Fellows, and though every Fellow sympathised deeply with him in the sufferings he has undergone yet it was felt and expressed in a resolution which was carried that the case was not one in which the Council could afford pecuniary assistance.

At the election for members of council in July there were eleven candidates and five vacancies; Mr. H. G. HOWSE and Dr. J. WARD COUSINS were re-elected and Mr. EDMUND OWEN, Mr. RICKMAN J. GODLEE, and Mr. W. WATSON CHEYNE were elected. 609 Fellows voted by proxy and only 46 Fellows voted in person. Sir WILLIAM MAC CORMAC was re-elected President and Mr. ALFRED WILLETT and Mr. H. G. HOWSE were appointed Vice-Presidents.

The Honorary Medal of the College was presented to Sir JAMES PAGET and to Lord LISTER. The Hunterian Oration was delivered by Mr. CHRISTOPHER HEATH, Past President of the College, and the Bradshaw Lecture by Mr. ALFRED WILLETT, senior Vice-President. Two Past-Presidents of the College, Sir J. ERIC ERICHSEN and Sir T. SPENCER WELLS, died during the year and the deaths of Sir GEORGE M. HUMPHRY, a past member of the Council, Mr. OLIVER PEMBERTON, and Mr. WALTER RIVINGTON, members of the Council, have also to be recorded.

Mr. J. B. BAILEY, the Librarian of the College, who had done so much for the arrangement of the Library and the convenience of the readers, died in April. Mr. V. G. PLARR, B.A. Oxon., late librarian to King's College, has been appointed to succeed him. The Pathological Curator, Mr. J. H. TARGETT, having resigned, Mr. S. G. SHATTOCK has been appointed as his successor. The Jacksonian prize was awarded to Mr. COZENS BAILEY for his essay on the Pathology, Diagnosis, and Treatment of the Diseases of the Prostate Gland. The subject for the Jacksonian prize in 1898 is Hydrophobia.

We have to record a valuable alteration in the regulations for the Museum. In future it will be opened at 10 A.M. instead of at 11 A.M. Gratitude will be felt for this concession on the part of the Council, but we would urge that the Library should be opened at 10 A.M. also and that it is surely not necessary to close both the Library and the Museum during the whole of September. It is, of course, necessary to clean the Library annually but surely a few days should suffice for this purpose.

The Analytical and other Commissions of THE LANCET.

One interesting fact to record this year in connexion with this department is the enlargement and remodelling of THE LANCET Laboratory. In order to keep pace with increasing demands upon the work required of it this was commenced at the beginning of the year and finished by the end of March. This needful step led of course to a temporary suspension of practical work. Nevertheless the work done this year in the Laboratory compares favourably both in regard to its interest and amount with that recorded last year.

The first inquiry relating to the use of antiseptics in food appeared in THE LANCET of Jan. 2nd. In this report we printed the views of several medical men who are regarded as authorities on the subject and their evidence showed some diversity of opinion as to whether antiseptics in the quantities used for preserving food are injurious to health and upon the point as to whether legislation could be satisfactorily applied. Provided, however, that certain restrictions were made the general opinions expressed appeared to be in favour of the use of preservatives being in some instances permitted. For ourselves we think that legislation should be directed against the abuse of antiseptics whilst specifying also the amount of a preservative permissible and in what articles of food its use is justified.

In this number of THE LANCET appeared an account of a process for softening and sterilising water. The apparatus was tested in the Laboratory both chemically and bacteriologically with the results which appeared to justify the claims of the inventors.

Some interesting experiments were made in the Laboratory upon fur collarettes which had been known to cause acute dermatitis. We could find no evidence in support of the view that chemical irritants were the cause of the eruption. We expressed the opinion that it was due rather to a mechanical effect. Thus it was found that when a fur which had been known to produce irritation was gently pressed upon a slab of soft grease the hairs penetrated into the fat, while the hairs of another fur which had not produced irritation did not penetrate but curled round. Microscopical examination confirmed this view. The irritating collarettes were, as a rule, found to consist of the fur of old animals while the non-irritating collarettes were generally composed of the furs of young animals. The hairs of the former are thick and rigid with a fine point at the tip while the hairs of the latter are of uniform thickness and yielding. Confirmatory evidence that this was the true explanation appeared in clinical reports of cases.

In THE LANCET of April 24th was published a full analysis of the new water-supply to Worthing which was made available for domestic use for the first time in April last. The results were excellent. This step at Worthing marks the close of a bitter experience in the history of the town which as our readers will remember was visited with a severe epidemic of typhoid fever as a result of a polluted water-supply. Our representatives were present at the inaugural ceremony.

The first of a series of articles on Sicily as a Health Resort, to which further allusion is made, appeared in THE LANCET of June 5th. This inquiry involved a considerable number of analyses of water which were carried out in the Laboratory. The results appeared in THE LANCET of July 24th. The waters thus examined showed exceptional purity.

The simplification of the analysis of potable waters so as to bring within the reach of medical officers of health an easy yet fairly reliable means of differentiating the quality of water-supplies was the subject of criticism in THE LANCET of July 10th. The results of analysis of a certain sample of water given by this simple process were placed side by side with the results obtained in the Laboratory in the ordinary way so that the

merits of the simple process could be at once seen. The comparison was satisfactory.

Our Commissioners again visited Henley this year on the occasion of the annual regatta. Their report appeared in THE LANCET of July 24th. While they had evidence of the greater attention paid to the sanitary condition of the river during regatta week yet they expressed the opinion that something more might be done to prevent the pollution of the river with discarded remnants of food. The nooks all along the course were found to be full of floating pieces of bread, cucumber, tomato, eggs, and so on, which though not seriously defiling the river must be counted as offensive.

In the special inquiries just epitomised the number of analyses involved and made in THE LANCET Laboratory was 136.

The number of samples of foods, drugs, and beverages, examined in the Laboratory during the year was 120, an advance of twenty over the previous year. The number of analytical determinations made in connexion with this work amounted to 300, an advance of fifty over the number last year. As is well known the results of the work of this department are published in our columns under the heading of "Analytical Records from THE LANCET Laboratory," and no sample is reported upon without careful practical examination and inspection both chemical and microscopical. In this way we hope as we believe that our reports afford a reliable guidance to our readers.

THE LANCET *Commission on the Metropolitan Water-Supply.*

We have this year placed before our readers a wealth of material on the very important subject of the Metropolitan Water-supply. We have felt that, despite the great number of official inquiries and Royal Commissions that have been held on water-supply, not in the reports of any of these inquiries are to be found, at least compiled in a convenient way, facts and statistics relating in detail to the undertakings of the companies beginning with the intake and ending with the means of distribution. At any rate we do not know of an independent inquiry ever having been made on these points. It is exactly this omission which the articles that have appeared in THE LANCET this year are believed to repair. Over twenty articles have been contributed upon these important points and our readers, and those who running may read, have now placed before them just those facts which will enable them to understand what the whole water undertaking of London is and to comprehend its scope and ramifications. To take such a reliable and perfectly independent inventory, so to speak, of London's water undertakings was, as our readers may readily imagine, no easy task, yet we venture to think our Commissioner has carried out his quest so thoroughly and concisely as to have been able to present us with a plain, accurate, unbiased, and independent description of the whole plant and machinery upon the efficiency of which the inhabitants of London depend for the quality and quantity of their present and future water-supply. The inquiry is all the more important inasmuch as the subject with which it deals is again before a Royal Commission. Previous Royal Commissions have dealt mainly with the questions of the quality of supply and of the availability for future needs of the present sources. A definite pronouncement upon these momentous points has been made, the most important contribution of this kind being that of the report of the last Royal Commission which sat under the chairmanship of Lord BALFOUR of BURLEIGH. But this report had little to do with the value and worth of the London companies' undertakings, although this question was obviously one which would have to be seriously faced when the question of transferring the stock and goodwill of the London water companies to a municipal body came up for consideration. That the water administration of London will before long be placed under the control of a public body admits of little doubt, and therefore it is but right that the public should know with some preciseness what it contemplates buying—if that be decided upon—before purchase is eventually made and acquirement becomes an accomplished fact. On this head we venture to think that our recent inquiries will afford distinct assistance leading our legislators to decide the real value of the machinery and plant, distribution area, &c., which at present comprise the property of the eight London water companies and which represent, according to Lord BALFOUR'S Commission, the means with which London is to be provided with water for the next forty years. Time and energy have not been spared to make this inquiry as complete as possible and a reference to the series of articles to which we refer will convince the reader that this is so.

Our Commissioner has described every pipe, main, reservoir, and distributing service connected with the particular company concerned. All these, together with the area of distribution, are shown in a series of maps which were drawn expressly for this purpose. From this description it is possible to proceed to the exact locality of the various parts of the plant and machinery from intake to distribution of each and all of the London water companies' undertakings. It is thus possible therefore to gauge with accuracy the value of the undertakings not only in regard to present and future requirements but in regard also to the defects which seriously need attention and to the improvements which in the interest of public health are necessary. It is quite obvious to us that in view of the scope of inquiry of the Royal Commission recently appointed our field of inquiry must appeal as an important piece of evidence worthy of the first consideration to the members of this Commission. The Commission is asked to inquire (1) "whether, having regard to financial considerations and to present and prospective requirements as regards water-supply in the districts within the limits of supply of the metropolitan water companies, it is desirable in the interests of the ratepayers and water consumers in those districts that the undertakings of the water companies should be acquired and managed either (*a*) by one authority or (*b*) by several authorities; and, if so, what should be such authority or authorities. To what extent physical severance of the works and other property and sources of supply of the several companies and the division thereof between different local authorities within the limits of supply are practicable and desirable and what are the legal powers necessary to give effect to any such arrangements; (2) if the undertakings are not so acquired, whether additional powers of control should be exercised by local or other authorities; and, if so, what those powers should be; (3) whether it is practicable to

connect any two or more of the different systems of supply now administered by the eight metropolitan companies; and, if so, by whom, and in what proportion, should the cost of connecting them be borne and what are the legal powers necessary to give effect to any such arrangement."

We venture to submit that the report of THE LANCET Commission is full of relevant points involved in the consideration with which it is the business of the Royal Commission to deal. We take it that above all they must consider the question of the efficiency and size of the undertakings. Whether there are defects in the systems of intake and supply at any of the companies works should be apparent from the detailed description of these undertakings by our Commissioner. So far we have abstained from criticism on the facts brought to light, but we submit them for what they are worth and their significance either for good or evil will readily appear. After all it is largely the important question of the public health that is concerned and this primarily is our reason for instituting the inquiry. It will be evident to those reading these articles with ordinary intelligence where the defects lie and where in the interests of the public health alterations or improvements are imperative. Obviously the purchase value of undertakings so described should depend largely upon these conditions. For ourselves we believe we have printed a faithful record of facts, as otherwise the immense trouble we have taken would be futile. The question of the acquirement of the water companies' undertakings promises soon to be decided and this decision cannot be arrived at fairly and completely without a consideration in the most minute detail of the appliances of those undertakings from intake to distribution. This necessarily includes the whole plant and machinery of the company and the efficiency of such plant and machinery, be they mains, filtering beds, storage reservoirs or pumps. In a word, the community should know what it is purchasing or taking over with a view of control and we venture to think we have placed such knowledge in its hands which should materially assist it in coming to fair and equitable terms on the question of acquirement. Further and lastly, a not unimportant point bearing upon the question of acquirement is the interesting history and evolution of the companies concerned and upon these points also we think our inquiry affords valuable and relevant information which has not been hitherto publicly afforded.

THE LANCET *Special Commission on Sicily as a Health Resort.*

The climate of Sicily belongs to the warm marine class. It is characterised by great equability and freedom from extremes, either annual or diurnal, a high proportion of warm, bright, sunny days, moderate humidity, a moderate rainfall, a considerable amount of wind, and comparative exemption from fog, mist, or severe cold. Warmth, mildness, brightness, and equability are the predominant notes of the Sicilian climate. With the exception of an occasional day of sirocco, when the temperature may rise to 100° F. in the shade or upwards, extreme heat is very rare, and in the lowlands and upon the coast-line extreme cold is unknown. Snow rarely falls at the sea level and the thermometer only very exceptionally—perhaps four or five times in the year—touches freezing-point. The lowest recorded temperature at Palermo or Catania rarely in any year falls below 28° or 30°, and in many winters never reaches freezing-point. The mean temperature of the warmest month (July) at Palermo is 78·85° and at Catania 79·9°, while the mean temperature of the coldest month (January) at Palermo is 51·6° and at Catania 49·5°. The mean daily range is 12° at Palermo and 13·8° at Catania. These figures indicate a very high grade of equability, annual and diurnal. The mean annual temperature is 64·67° at Palermo and 64·4° at Catania. Palermo has an average of 167 "giorni sereni"—i.e., days of cloudless sunshine—in the year and 62 "giorni misti"—i.e., "mixed days" or days of partial cloud and partial sunshine. Catania has an annual average of 164 "serene" days and 118 "mixed" days. We may say that Palermo has, on an average, 229 fine days in the year and Catania no less than 282 fine days. Palermo has a mean annual rainfall of 29·87 inches, which falls upon 116 days. Catania has a mean of 21·37 inches, which falls upon 86 days. The mean relative humidity of the air is 65·4 at Palermo and 61 at Catania. These figures show that while the climate of Sicily may be described as "damp" if compared with that of Cairo, where the mean relative humidity is only 58·4, it may be described as "dry" if compared with that of England, the mean relative humidity of the air at Greenwich being 87. In truth, the humidity of the air in Sicily, like so many other Sicilian characteristics, is intermediate between the extremes of Africa and some parts of northern and western Europe. As regards the seasonal prevalence of rain, Sicily belongs to the region of winter rains. June, July and August are practically rainless, and the heaviest rainfalls occur in November, December and January. Sicily has a considerable amount of wind, though strong winds and storms are not frequent. Palermo has an average of only thirty-three days designated "ventosi" (windy) in the year. The sirocco is one of the most serious drawbacks to the Sicilian climate. It is most frequent at the equinoxes and is rare in winter. It is a south-easterly wind from the southern deserts, and it is a hot, dry wind obscuring the sky and bringing clouds of dust. It lasts one, two, or at most three days and is usually followed by refreshing rains. Its enervating effects are more felt by the healthy than by the ailing. Though disagreeable, it is not an unhealthy wind and does not aggravate existing disease or raise the general rate of mortality.

All the important resorts in Sicily are upon the coast and the meteorological differences which subsist between them are comparatively unimportant. Palermo has a larger rainfall and a higher proportion of wet and cloudy days than Girgenti, Catania, Taormina or Syracuse. On the other hand, the equability of its climate is more marked than that of the other places in question. Catania excels in warmth, brightness and large proportion of fine days but is somewhat less equable. Syracuse has a bright climate with a small rainfall but it is a windy place. The Sicilian climate is intermediate in character between the extremes of heat and cold, dryness and humidity, and it would appear antecedently probable that its *aurea mediocritas* would be found somewhat widely applicable to various states of debility and disease. Its general influence may be described as (1) *moderately tonic* and (2) *sedative*.

It may be expected to prove useful in the following classes of affections: 1. Bronchial affections, especially the dry and irritable varieties and including bronchial asthma. 2. Laryngeal affections of the same type as the foregoing. 3. Impaired convalescence after wasting diseases, the after-effects of the specific fevers, malaria, bone, and joint diseases, pneumonia, pleurisy, &c. 4. "Scrofula" and "lymphatisme." 5. Senile affections. 6. Anæmia and chlorosis. 7. Irritable nerve affections, including hysteria and neurasthenia. 8. Certain varieties of phthisis, especially early phthisis complicated by anæmia, low vascular tone or nervous irritability, and catarrhal phthisis. Among the diseases upon which the influence of the Sicilian climate is, on the whole, injurious may be mentioned rheumatism and renal affections. Ophthalmia in many of its forms might also be mentioned.

Sicily has undoubtedly been unduly neglected as a health resort and presents many advantages and attractions to the invalid and health seeker.

The Typhoid Fever Epidemics at Maidstone, Lynn, and Belfast: THE LANCET *Special Investigations.*

By special investigations, conducted on the spot, we were able to give early and full information concerning the history of these epidemics and the general sanitary conditions of the towns in question. Though there can be no doubt that the epidemics in Maidstone and Lynn were spread by contaminated water-supplies many other conditions also prevailed which facilitated the diffusion of the disease. In Belfast these other conditions likewise existed and to an appalling extent; the consequence was that, though there was not a sensational epidemic like that of Maidstone and the water does not seem to have been contaminated, there was in reality a worse state of affairs. At Belfast typhoid fever is endemic and, in the long run, occasions a greater proportion of sickness and deaths than have occurred at Maidstone. It is therefore most necessary that the very important question of water-supply should not efface those other considerations which render a population liable to epidemic disease—even in those districts of Maidstone which received the contaminated water-supply the incidence of disease varied considerably and its prevalence seemed to be dominated by other factors besides the water-supply. A map which we published giving the levels of the town showed that it was the higher districts that suffered most; and this may have been due to the fact that branch sewers, acting as ventilating shafts for the main sewers which are placed at the lowest levels, delivered a greater amount of sewer air in the higher portions of the town. At Lynn and at Belfast it was seen that though there were cases of typhoid fever in all directions still these cases clustered together in greater numbers in those districts where the drainage is more particularly defective or where the subsoil is especially foul and contaminated. Undoubtedly a pure water-supply is a primary necessity, but with the purest of supplies there will still be typhoid fever while uncovered privies, untrapped drains, or a foul subsoil are to be found close to kitchens. If the germ must obtain admission to the human body to cause the fever it can easily obtain admission otherwise than by drinking a glass of water, and our reports on the three towns which have most suffered from typhoid fever show how widespread are the causes of pollution which may produce mischief quite independently of the water-supply. That such defects still exist is due in part to the ignorance and indifference of the populations concerned and in part to the fact that persons owning insanitary property or indirectly interested in such property have obtained seats on the town councils where they have strenuously and too successfully resisted the attempts made to carry out measures of sanitary reform. By a direct vote the ratepayers of Maidstone refused to allow the town council to take over the water-works and by more than one direct vote the ratepayers of Lynn refused to sanction the scheme for obtaining a new water-supply proposed by the town council of that town. Thus the primary blame falls upon the ratepayers themselves. By their votes they have paved the way for the advent of epidemic diseases and thus courted the punishment which has now fallen upon them. The full and detailed exposition of this situation given in our columns should help to spread a better knowledge of the principles of sanitation and we trust the electors will be inspired with a truer sense of their own interests and their duty to the community.

Hospital Abuse.

The series of special investigations on the vexed question of hospital abuse which we commenced in the autumn of 1896 has been continued throughout the present year. From the south-west of England, Plymouth and Exeter being first visited, our Special Commissioner proceeded to such densely populated manufacturing and commercial centres as Manchester, Liverpool, Leeds, and Birmingham. At Manchester at least the profession is not indifferent to the grievance but have made a virile attempt to deal with the question. First, there is the medical guild which as an active combative body has done much to spread a knowledge of the difficulties which beset the general practitioner. Secondly, the principal hospitals of that town have not only established a wage limit but, with the aid of the Charity Organisation Society, have instituted a system of inspection by which inquiries are made at the homes of all patients so as to ascertain whether they are fit subjects for the receipt of gratuitous medical relief.

At Leeds our Commissioner was first able to point out the consequences, which can scarcely be qualified as otherwise than revolutionary, that are likely to accrue from the growing practice of compelling workmen to subscribe to the hospitals. Theoretically, of course, the subscriptions are voluntary and confer no rights. In practice they become obligatory and therefore the workmen conclude that as old subscribers to the hospitals they have the right to claim treatment when ill. In practice also the hospitals are now so largely dependent on working-class subscriptions that they dare not draw a hard-and-fast line which might give offence to their principal financial supporters. Thus the average annual expenditure of the Leeds Infirmary during the previous five years had been £23,179, and towards this sum the workmen now contribute about £7000. This, they might claim, should place in their hands more than a quarter of the voting power for the management of the infirmary. If their £7000 were withdrawn such an act would spell bankruptcy for this excellent hospital. Already the workmen, being dissatisfied

with the management of the convalescent home attached to the infirmary, have resolved to withdraw a part of their subscriptions so as to establish a convalescent home of their own. Our Commissioner pointed out that the workmen might under certain circumstances be tempted to withdraw the whole of their subscriptions and to open a hospital of their own. This suggestion caused great indignation and many and loud were the protests made, notably by the *Yorkshire Post*.

But on reaching Birmingham our Commissioner found a still more menacing state of affairs. Here the workmen help to defray the cost of the hospitals first by the payment of a registration fee on being admitted, which payment is enforced by most of the hospitals. Then the workmen subscribe directly to the hospitals about £6000 annually, and they also subscribe more than £13,000 to the Hospital Saturday Fund. With this money they maintain several convalescent homes of their own and make a free gift of £10,000 to the hospitals. The expenses of the latter average £45,000 per annum and it is calculated that what with the sums mentioned and the registration fees the workmen provide from their own pockets half this expenditure. There is nothing to prevent their withdrawing all this money and establishing instead hospitals and dispensaries governed exclusively by themselves. Such a possibility had never before been foreseen and our Commissioner has been the first to call attention to this new complication.

At Leeds, Manchester, and Birmingham many medical men testified to the effect of hospital abuse upon the general practitioner. The artisan class, the clerks, and shop assistants who can well afford the small fees charged for ordinary consultations now frequent the hospitals, where they imagine they will obtain better advice. That this class may claim to be admitted to the hospitals when it is a question of an expensive surgical operation or lengthy medical treatment is very generally conceded. But, on the other hand, the general practitioner thus finds that he has only trivial cases to deal with, and even the trivial cases now also gravitate towards the hospitals.

The competition of the hospitals against the general practitioner is a grievance that extends to other countries and the medical men of Paris have formed a strong medical syndicate or union to deal with this and other kindred subjects. Courteously received by the committee of this medical syndicate, our Special Commissioner was able to describe fully its organisation and the grievances of our Parisian colleagues. In Paris the position is just the reverse to what obtains in England. There is not the same competition between the hospitals because they are nearly all state or municipal institutions. Though they are intended for the poor still the principle is that every patient must pay for his maintenance. If the patient declares he is unable to pay then full inquiries are made at his domicile to ascertain whether this is really the case. The abuse arises with those who do pay for they are admitted without question or inquiry though many of them could well afford to remain at home and give full fees to their private medical attendants.

In Nottingham, Leicester, Coventry, and Southampton the evidence as to the prevalence of hospital abuse has also been carefully collected, and in Nottingham and Coventry the cheering fact was noted that the medical profession of those towns had formed well organised unions to deal with such ethical and economical questions.

Honours to Medical Men.

The annual task of recording the names of those members of the profession who have been signalled out for honours by the Queen during the current year is always a pleasant one, but on this occasion, the year of HER MAJESTY'S Diamond Jubilee, our pleasure is greatly increased by reason of the fact that our list must be headed by the name of LISTER, the first medical man who has had the honour of being raised to the peerage. The services which he has rendered not only to the medical profession but to the public in general, and indeed to the whole world, richly deserved such a reward—a reward which redounds greatly to the honour of our country.

Among the other recipients of New Year honours were Dr. RICHARD DOUGLAS-POWELL, who received a baronetcy, and the Hon. WM. RICHARD KYNSEY, C.M.G., who received a knighthood. Deputy-Surgeon-General CHARLES BENJAMIN MOSSE, C.B., was made a Companion of the Order of St. Michael and St. George, and Dr. WILLIAM ALLEN STURGE, of Nice, a Member of the Fourth Class of the Royal Victorian Order.

Naturally the larger list of honours which were bestowed upon the medical profession this year were received at the time when the whole of the British Empire was rejoicing over the remarkable reign of Her Majesty the QUEEN. Dr. SAMUEL WILKS, the President of the Royal College of Physicians of London, received a baronetcy, an honour which his eminent services to science and to the practical philanthropy of Guy's Hospital so well merited. Sir WILLIAM MACCORMAC, the President of the Royal College of Surgeons of England, also received the well-earned reward of a baronetcy, as did Mr. THOMAS SMITH, whose operative skill is as widely recognised as are his amiable qualities. Dr. W. R. GOWERS'S knighthood was hailed by the profession as a recognition of valuable work, and like honours were conferred upon Dr. FELIX SEMON; Dr. GEORGE F. DUFFEY, the President of the Royal College of Physicians of Ireland; and Dr. WILLIAM THOMSON, the head of the corresponding surgical corporation. In the list of the promotions in, or selections for, the Order of the Bath the following names appeared: Dr. RICHARD THORNE THORNE, C.B., now Sir RICHARD THORNE, by virtue of his promotion to K.C.B. (Civil); Inspector-Generals of Hospitals Dr. H. F. NORBURY, R.N., Mr. J. J. L. DONNET, R.N., Mr. H. MACDONNEL, R.N., and Surgeon-General C. A. GORDON, who were promoted to K.C.B. (Military); Dr. T. GRIMSHAW, Registrar-General of Ireland; Dr. DAVID NICOLSON, one of the Lord Chancellor's Visitors in Lunacy; Surgeon-Major-General J. JAMESON, Director-General of the Army Medical Department, and Mr. HUGH ADCOCK, Consulting Physician to H.I.M. the SHAH OF PERSIA, who received the C.B. (Civil); Surgeon-Major-General C. SIBTHORPE and Brigade-Surgeon-Lieutenant-Colonel G. W. MCNALTY the C.B. (Military). Surgeon-Major-General W. R. HOOPER, President of the Medical Board, India Office, and Surgeon-Major-General J. CLEGHORN, Director-General of the Indian Medical Service, received the honour of C.S.I.; and Messrs. W. M. HAFFKINE, A. F. R. HŒRNLE, and

J. HUSBAND that of C.I.E. Dr. J. MACKIE, the President of the Egyptian Quarantine Board, and Dr. C. GAGE BROWN, the Medical Adviser to the Colonial Office, were promoted to K.C.M.G.; and Dr. S. W. BUSHELL received the C.M.G. Deputy-Inspector-General of Hospitals H. C. WOODS received the Royal Victorian Order (fourth class) In addition to this list of Jubilee honours HER MAJESTY THE QUEEN subsequently conferred the dignity of a baronetcy upon Sir JAMES REID, K.C.B., Resident Physician in Ordinary to Her Majesty. A knighthood was also conferred upon Mr. THOMAS FITZGERALD, F.R.C.S. Irel., senior surgeon of Melbourne Hospital. The name of His Highness Sir BHAGVAT SINHJEE, G.C.I.E., M.D., F.R.C.P. Edin., LL.D., Thakore Sahib of Gondal, Kattiawar, whose beneficent rule over a contented, happy, and prosperous state has earned for him the well-deserved reward of Grand Commander of the Indian Empire, must not be omitted.

Obituary.

And now we have to perform the sad task of passing in review the names of some of those who have been removed from our ranks by the hand of death. One of the first was Dr. F. J. MOUAT, LL.D., F.R.C.S. Eng., a distinguished member of the Indian Medical Service and an ardent educational reformer; and although his actual presence has been greatly missed by all who knew him personally his name will survive not only as one of the benefactors of our Indian possessions, but as a statistician who has rendered inestimable service to the medical profession and to the country generally. EDWARD BALLARD, M.D., F.R.C.P. Lond., F.R.S., a man of sterling character and a devoted member of his profession, was also called from us in the early part of the year, and he too, like Dr. MOUAT, did great service to both the profession and the public. Of the result of his investigation into effluvium nuisances arising from manufacturing processes Sir JOHN SIMON, his chief on the Local Government Board, has said the information is, "I believe, not only without equal in its own branch of subject matter, but certainly without superior as to thoroughness of work in any sanitary publication known to me." Sir THOMAS SPENCER WELLS, Bart., F.R.C.S. Eng., though dead still exerts a living influence in the special department of surgery in which he excelled. But for him it is questionable whether ovariotomy would not have been abandoned as a hopeless operation, but his indomitable perseverance prompted by his undoubted genius has established it as a useful and justifiable operation. GEORGE DAVID POLLOCK, F.R.C.S. Eng., renowned for the care with which he examined his cases and formed his diagnoses and for the minute attention he bestowed upon after treatment, was a gentleman of the old school of manners. As a leader of the profession he has left a blank which it will be difficult to fill. The mention of the name of CHARLES ELLIOTT LEOPOLD BARTON HUDSON, F.R.C.S. Eng., will cause a sigh of regret not only among members of our own profession who had the pleasure of knowing him personally, but also among his many patients, rich and poor alike. Among the latter indeed at the Middlesex Hospital he was well beloved for his patient and gentle treatment, for his kindliness of manner and thought, as well as for the skill he displayed in treating his cases. Surgeon-Major-General Sir W. A. MACKINNON, K.C.B., F.R.C.S. Edin., late Director-General of the Army Medical Department, will never be forgotten among members of the Army Medical Service and his long, varied, and distinguished career will be looked upon with pride by all members of the services. JAMES CAGNEY, M.D. R.U.I., whose sad death at the early age of thirty-eight years is still fresh in our minds, was a man of culture and high intellectual capacity. He rendered a most important service to the profession by clearly demonstrating that the hanging posture which was at one time so much in vogue in the treatment of locomotor ataxy had the effect of relaxing and not that of stretching the spinal cord.

To mention the names of all the prominent practitioners who have been removed from our Register by death would be impossible in the short space at our disposal, but attention must be called to Surgeon-General HERBERT TAYLOR READE, C.B., V.C., who received the Victoria Cross for a daring act of bravery at the siege of Delhi. JABEZ SPENCE RAMSKILL, M.D. Lond., was a notable figure in connexion with the early days of the National Hospital for the Paralysed and Epileptic. Sir JOHN CHARLES BUCKNILL, M.D., F.R.C.P. Lond., F.R.S., J.P., was a high authority on psychological medicine. He did yeoman's service in the cause of the insane, but will also be remembered as one to whom the great volunteer movement of 1852 in no small degree owed its origin. Surgeon-General WILLIAM ROBERT CORNISH, C.I.E., F.R.C.S. Eng., was prominent in Indian medical politics. The active part which he took in compelling the Government of India to alter the ration which he considered inadequate for the starving natives in the famine year of 1877 will never be forgotten though it is to be regretted that for all his meritorious work which resulted in saving countless lives he was only rewarded with a Companionship of the Order of the Indian Empire. THOMAS BELL FLETCHER, M.D. Paris, F.R.C.P. Lond., took a great interest in medical education. HENRY THOMPSON, M.A., M.D. Cantab., F.R.C.P. Lond., was the senior Fellow of St. John's College, Cambridge, Consulting Physician to the Middlesex Hospital, an elegant scholar and a sound clinician, JOHN BRAXTON HICKS, M.D., F.R.C.P., F.R.S., was a famous obstetrician. ALFRED HALL, M.D. Edin., F.R.C.P. Lond., was a model general practitioner, kind, frank, cheerful, and well up in the latest improvements of medicine. Record must also be made of the following names: CHARLES SMART ROY, M.A. Cantab., M.D. Edin., F.R.S., professor of pathology at Cambridge; the numerous instruments which his genius created for registering and recording graphically the results of his researches remain as memorials of his ingenuity and inventive power: OLIVER PEMBERTON, J.P., F.R.C.S. Eng.: JAMES ANDREW, M.D. Oxon., F.R.C.P. Lond., a good scholar and a man of thoroughly cultured mind.: WALTER RIVINGTON, M.B., M.S. Lond., F.R.C.S. Eng., an ardent advocate of medical reform: ADOLPHUS JOSEPH RICHARDSON, M.D. Cantab. JAMES GREIG SMITH, M.A., M.B. Aberd., F.R.S. Edin.: CHARLES ALEXANDER LOCKHART ROBERTSON, M.D. Cantab. and St. And., F.R.C.P. Lond.: MATTHEW CHARTERIS, M.D. Edin., F.R.S. Edin.: FRANK CHANCE, M.B. Cantab., F.R.C.P. Lond.

In other countries the medical profession has lost

MAX JOSEPH OERTEL: VICTOR MEYER: MARC OLIVET, Professor of Psychiatry in the University of Geneva; NIKOLAI ZDEKAUER, the distinguished Russian physician and sanitarian; and KARL REMIGIUS FRESENIUS, director of the chemical laboratories at Wiesbaden, whose name will ever be remembered in connexion with his system of chemical analysis.

Annotations.

"Ne quid nimis."

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

A GENERAL meeting of the Prince of Wales's Hospital Fund for London was held on Dec. 20th, at Marlborough House, H.R.H. the Prince of Wales, President of the Fund, being in the chair. Lord Rothschild, the treasurer, read the financial statement from which it appeared that a sum of £187,000 had been collected, of which £99,000 had been invested. Of the £187,000 the sum of £20,500 had been received in annual subscriptions and £1500 as interest, so that the income of the fund so far was about £22,000. This sum will be available, it is hoped, in perpetuity, but in addition there is to be divided this year as a special Jubilee gift the sum of from £38,000 to £40,000 accruing from the sale of the special Hospital Stamps. Altogether, then, some £60,000 are available for this year and this sum is to be divided mainly among the larger hospitals, though the many smaller institutions will also receive grants. The Council confirmed the resolution of the executive committee passed upon Nov. 9th, 1897, "that in view of the controversial character of the proposition of the Charity Organisation Society to establish a Central Hospitals Board for London, it is inexpedient that the Prince of Wales's Hospital Fund for London be associated with the movement." We cannot but recognise that there is force in this decision much as we may regret the circumstances which have led to it. At present the Central Hospitals Board has not only no existence but those who are most eager for its inception have not come to any agreement among themselves as to what shall be its constitution. Altogether we consider that the proposed distribution of the fund for this year shows a wise discretion. As Lord Lister said, it is but a tentative method, but every care seems to have been taken to adopt fair measures and to show to the public that their money is under sound stewardship.

CONFLICTING REGULATIONS AND SANITARY DILEMMAS.

WITHOUT admitting the anarchist contention that all crime, vice, and misery has its origin in the restriction of the spontaneity and aspirations of the individual by man-made law, we cannot deny that excessive legislation and the multiplication of authorities often fail to fulfil their purpose and create difficulties which would not otherwise have arisen. This is forcibly illustrated in a question at present agitating the London vestries and the members of certain trades and which will, not without justification, be urged as a reason for extending the area of the metropolis so as to bring within the jurisdiction of the London County Council such populous and contiguous districts as Tottenham and West Ham. The latter, as all know, has long been the refuge of those offensive trades that are prohibited within the so-called metropolitan area, although the boundary is purely arbitrary. Among the most offensive of offensive trades is the manufacture of fish manure and superphosphates, the process consisting in the boiling down of fishmongers' offal and coprolites with sulphuric acid, &c., the mass being subsequently evaporated to dryness and ground into a sort of artificial guano. The proprietors of these works, besides providing a product of great value to the agriculturist, fulfil sanitary functions of an important nature in the daily and gratuitous removal of offal of the very worst kind from every part of the metropolis, the suspension of which for but a few days would be productive of the gravest inconvenience and danger to health. To minimise the nuisance incident to the traffic the health authorities of West Ham had very properly restricted the transport of fish offal through the streets to the hours from 12 P.M. to 6 A.M., but for some unaccountable reason the recent by-laws of the London County Council have fixed those of 4 A.M. to 10 A.M. in the summer and 6 A.M. to 12 noon in the winter months, and the consequence of these incompatible regulations has been that the carmen on arriving at the borders of West Ham have been given in charge for driving within prohibited hours. An appeal to the officers of the County Council was met by a reference to Section 33 of the London Public Health Act, which, so far from offering a solution of the difficulty, introduces further complications, for if the sanitary authorities themselves undertook the removal of the offal their servants would be no less liable to be stopped by the West Ham sanitary officers, and should they dispose of it otherwise within the metropolitan area an important industry would suffer by the cutting off of the supply of raw material from all but the riverside districts. Again, while the manufacturers can afford to collect gratuitously that for which they pay nothing and which the tradesmen are always anxious to get rid of, the local authorities could not do so without adding to the rates, and the fishmongers declare that the exaction of a charge, however small, would be to many of them an intolerable tax. Of course the immediate difficulty would, and probably will, be removed by the assimilation of the regulations as to hours, those in West Ham being undoubtedly the more suitable, but the discussion of Section 33 has already raised fresh issues. The corresponding section in the Metropolis Management Act was enabling only, whereas this is compulsory, and though this may be well enough in the case of trade refuse of a kind likely to cause nuisances, it would be intolerable that the sanitary authorities should be called on to remove other kinds such as furnace slag and builders' materials, with which indeed in one district they have been threatened.

THE WESTMINSTER PLAY.

"INTERPRETATION" of the antique scenic masterpieces has a wider significance than that conveyed by the dictionary, and nineteenth century scholarship finds on the stage, whether at school or college, a yet more vivid and perfect realisation of the *chefs d'œuvre* of an Aristophanes or a Plautus than that possible in the class-room. To the honour of Westminster be it reiterated its dramatic representation of Roman comedy, dating from Queen Elizabeth, has been steadier as well as of longer continuance than at any other school, insomuch that imitation ("the sincerest form of flattery") has carried the practice into other "foundations" or seats of learning until the Greek or Latin play rendered with all due scenic and even musical accompaniment has become a standing feature of the academic year. Even the modern commentator admits the superior interpreting power of gesture over mere voice in many

passages of the ancient drama and one of the latest as well as best editors of Plautus—Professor Cocchia, of Naples—in his annotations on vv. 60 and 483 of the *Trinummus*, for instance, says: "These and such like phrases are always accompanied by the gesture of the individual who pronounces them which serves to reveal their true meaning." Indeed, if the classics are worth retaining at all as a means of mental culture the reinforcement their study derives from dramatic representation must be welcomed by all their votaries and for this reason we are glad to notice this year's "Westminster Play" as perpetuating the traditions of the school with unabated vigour and effect. There is no need to point out the claims of the *Trinummus* to the favour implied in its frequent performance. Our only regret is that the Plautine repertory is not more largely drawn upon. What light would not be shed, for example, on the medical art in ancient Rome, its practitioners and their patients, by a judicious representation of the *Menaechmi*? This is an old suggestion of THE LANCET, but it will bear repetition now that the *Menaechmi* has been ably edited for schools by English as well as continental Latinists. Ancient practice, as given in the fifth act of that play, had apparently ceased to carry the patient to the temple of Æsculapius for treatment; but the medical man had begun to pay his visits at the house to which he was professionally called. What an object-lesson in the *vie intime* of antiquity might not be given to the modern world in the capital pulse-feeling scene with its local surroundings ("cur apertas bracchium," &c.)? Or, again, take that excellent acting play, the *Mercator*, with its prescription (Act I., scene 2, v. 31) for hæmoptysis:—

"Retinam ex meile Ægyptiam vorato: salvom feceris."

Or yet, again, what pictures of the ancient city life might not be presented in a performance of the *Amphitryon* or the *Epidicus* with their "tabernæ medicinæ" and all their frequenters? Even those to whom the original text of the comedy was a sealed book might carry away from its scenic reproduction and interpretation a far more vivid impression of its contents than has hitherto been possible to the mere scholar however philologically "sound." For archæology is lifting the veil from many a dark corner of antiquity and lighting up ancient literature itself by treasure-trove which must make it not only more intelligible but more attractive, particularly when susceptible of treatment on the stage.

THE MORTALITY OF OCCUPATIONS.

WE have received a copy of Dr. Tatham's recently published essay on the mortality of males employed in certain occupations. The book, which extends to some 360 pages, forms Part 2 of the Supplement to the Fifty-fifth Report of the Registrar-General, Part 1 having been issued in the course of last year. The work deals exhaustively and in some respects after a novel fashion with the subject of occupational mortality and as it is based on the total deaths occurring in England and Wales during the three years 1890-91-92 it will be seen that the facts dealt with are sufficiently numerous to secure satisfactory results. Not only is the mortality given in all useful detail for each of 100 occupations, but in several instances the mortality in certain industries is given for local sub-divisions of those industries, and thus the aggregate number of occupations dealt with is still further increased. A specially interesting section of the work is that which treats of the mortality of unoccupied persons and this section will be found worthy of consideration by the statesman not less than by the sanitary reformer. A new Life Table for the Healthy Districts of England and Wales in 1881-90 completes the present volume which forms a valuable contribution to the series of essays on vital statistics emanating from the General Register Office the first of which was penned more than thirty years ago by Dr. William Farr. The subjects dealt with in this volume are replete with interest to all members of our profession whether engaged in the practice of State medicine or not. We therefore purpose shortly to notice the more important points of the work in consecutive numbers of THE LANCET for the information of those of our readers who do not possess the original.

DINNER TO DR. W. J. COLLINS.

ON Thursday, Dec. 16th, Dr. W. J. Collins, the chairman of the London County Council, was entertained at dinner at the Trocadero Restaurant by the staff and a number of past students of St. Bartholomew's Hospital. Mr. Howard Marsh was in the chair and about 130 were present in all. The provinces were well represented, a prominent figure being Sir Robert Craven, F.R.C.S., of Hull. Mr. Marsh proposed the health of the guest of the evening, who replied in an admirable speech, and Mr. Alfred Willett gave the health of the three secretaries who had worked hard to make the occasion worthy of its object with complete success. Altogether the festivity was a happy conception and equally happy in the carrying out thereof.

THE Medical School of St. Thomas's Hospital has passed the following resolution:—

"That the Medical School of St. Thomas's Hospital earnestly requests Her Majesty's Government to introduce into Parliament a Bill similar to the London University Commission Bill of 1897 and to pass it into law during the ensuing session."

WE understand that Dr. Bruce of Dirgwall will be in attendance on His Royal Highness the Duke of Edinburgh during his stay in Egypt and that Helouan will be the place selected for the visit.

SURGEON-MAJOR-GENERAL JAMES JAMESON, M.D., C.B., Director-General of the Army Medical Department, has been appointed Honorary Surgeon to the Queen in the place of the late Sir William Mackinnon.

MR. ARTHUR TREHERN NORTON, F.R.C.S. Eng., Surgeon-Lieutenant-Colonel, Volunteer Medical Staff Corps, has been appointed by Her Majesty a Companion of the Bath.

THE Court of the Fishmongers' Company have resolved to contribute £1000 per annum for five years to the Prince of Wales's Hospital Fund for London.

SIR RICHARD THORNE'S report as principal medical officer has been published as a supplement to the annual report of the Local Government Board.

DR. ROBERT BARNES has resigned the Fellowship and the office of Trustee of the Obstetrical Society of London.

AT a recent meeting of the Lancashire and Cheshire Branch of the British Medical Association Mr. R. B. Anderson delivered an address in which he recapitulated the story of his wrongs and maintained that in his prolonged struggles against injustice and misinterpretation of the law he had been fighting a battle, as far as one man could, in behalf of the interests and honour of the profession. A resolution was carried, with one dissentient voice, expressing sympathy with Mr. Anderson and a hope that "the representatives of this branch on the Council of the Association will use the strongest efforts to induce that body to take action to defend the rights of the medical profession as affected by Mr. Anderson's case."

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE third meeting of the Royal Commission on the Metropolitan Water-supply was held in the Moses Room of the House of Lords on Monday, Dec. 13th. The names of the Commissioners were given in THE LANCET on Nov. 27th. With the exception of Sir George Barclay Bruce they were all present at the meeting. The London County Council, the water companies, and the Hertfordshire and Middlesex county councils were represented by counsel and the Corporation of the City of London by the Remembrancer.

The continuation of the examination of Mr. H. L. Cripps, the Parliamentary agent for the London County Council, occupied the whole of the sitting. Mr. Cripps said that no scheme for putting the water companies under the control of a board seemed feasible to the London County Council. He was not prepared to say that the London County Council were opposed to any practical and efficient scheme if such could be provided. He felt a difficulty in speaking definitely as to control because he did not understand exactly what was meant by the term. He was not authorised on behalf of the Water Committee of the London County Council to suggest any additional powers of control which might be added to those which at present existed over the various water companies. The Water Committee of the London County Council were of opinion that a final settlement of the question could not be arrived at by any system of control and they were unable to suggest any proposal as to what the powers of control should be. They were, however, ready to give their most serious consideration to any definite proposals that might be made and in case any should be brought before the Commission they would be glad to express their opinion concerning them.

Mr. Cripps gave some information concerning suggestions which had already been made with regard to control by Parliamentary Committees, by Commissions, and by various provisions contained in Bills which had been brought before Parliament. Sir George Gray's Bill in 1851 provided that all the water companies should be amalgamated and a common stock formed of the capital; that the dividend of the consolidated stock should not exceed 5 per cent.; and that the sources of supply should be placed under control. This Bill was not passed and is now out of print. In the year 1852 Sir Benjamin Hall introduced a Government Bill which proposed the transfer of the various water businesses to a representative body.

The Royal Commission which was presided over by the Duke of Richmond recommended that a constant supply of water should be introduced and gave the opinion that it was of vital importance that the water-supply of London should not remain in the hands of private companies but that it should be entrusted to a responsible body. The Bill introduced by Mr. Shaw Lefevre in 1871 provided for a constant service and for the efficient filtration of the water supplied. A water analyst was also to be appointed and the accounts of the companies were to be audited by a public auditor. It was provided also that the arrangement for the water-supply should be improved and that in default of the companies submitting to the conditions prescribed the Metropolitan Board of Works should have the power to purchase any or all the various undertakings. The Bill was strongly opposed and was withdrawn. Another Bill was introduced which omitted the purchase clauses and this Bill ultimately became the Metropolis Water Act of 1871.

A Select Committee on the Metropolitan Fire Brigade, which sat in 1877, advised that the water-supply could not "be made to afford the full measure of protection which the metropolis should possess until it is consolidated in the hands of a single authority conducting the business not for immediate profit but for public convenience." The committee, however, declined to express an opinion as to the conditions on which the transfer of the undertakings of the water companies should be made to a new water authority. They, however, insisted that the changes which they deemed necessary would be most effectively carried out if by "unity of control consolidation of public interests were allowed to supersede the separate action of the various water companies." Sir William Harcourt's committee dealt amongst other things with the supply of water by meter. Such a method of supply would not be likely to be satisfactory and Mr. Cripps thought that the metropolitan governing bodies would not assent to the general supply of water to London by meter. With regard to the question as to whether the cost to the consumer would be lower or higher if such a method of supply were adopted Mr. Cripps said he could not express any opinion unless a definite plan was submitted. Sir Matthew White Ridley's Commission dealt exclusively with the question of the purchase of the water undertakings. Lord Balfour's Commission had made a number of recommendations with regard to control; of these none had yet been carried into effect. Mr. Plunkett's committee in the year 1895 had discussed various proposals as to control, but no definite recommendation had been made. Lord James of Hereford had introduced a Metropolis Water Bill which vested the control in a new representative board. The Bill was modified to allow the neighbouring county authorities to become independent. The Government had, in fact, yielded to the same pressure that had been brought to bear on the London County Council by the country districts immediately surrounding the metropolitan area. Mr. Chaplin's Act of the present year enabled any local authority or water consumer to complain to the Railway and Canal Commission in the case of failure on the part of water companies to supply a sufficient amount of water. In answer to General Scott Mr. Cripps said the County Council were considering what powers they had under this Act of dealing with the complaints of water consumers. Mr. Cripps, Q.C., examined the witness at some length with regard to the recommendations of the Duke of Richmond's committee apparently with a view of bringing out clearly the conclusions to which they had come—namely, that the water-supply ought to be in the hands of a public responsible body and that such a transfer was necessary for reasons of public health. The witness admitted that the effect of the arrangement made by the late Metropolitan Board of Works with regard to gas had resulted in the supply of a purer as well as a cheaper article having a greater illuminating power. The regulations made had, moreover, been attended with great financial success to the companies themselves. The supply of gas could not, however, fairly be compared with that of water; water was a necessity of life and it was not only necessary that it should be laid on to every house, but a householder was obliged to get his supply from the particular company which supplied the district in which he lived. With regard to gas the matter was obviously different; no one was obliged to use gas—there were other illuminants, electric light, oil, and candles.

In the interests of the people of London the witness thought it would be well for them to obtain an independent water-supply entirely distinct from that of the present water companies. He admitted that this course would not be submitted to by the water companies without the most severe fight ever known (with which statement the counsel of the water companies appeared to be in hearty agreement). He thought that the County Council might obtain the businesses of one or two companies if it were not for the fact that an agreement existed between the various companies that none should sell their undertakings unless the whole of the businesses were bought.

During the course of the examination reference was again made to the unsatisfactory conditions under which the official auditor of the water companies worked—viz., that no provision was made by which he could obtain legal assistance should there be a difference of opinion with regard to the way in which the accounts were kept. In the year 1887, Mr. Cripps stated, the Official Auditor went to arbitration in a case in which he had a difference with the accountant of the West Middlesex Company and found that he could only employ counsel at the risk of having to pay the expenses out of his own pocket.

With regard to the varying charges made by the different companies Mr. Mellor asked some questions with reference to those of the Lambeth Company, which charged their full statutory rates. A customer supplied by this company living in a house of which the rent is £30, which is rated at £24, has, roughly speaking, to pay a water rent of £3 a year. With regard to the amount paid by the people of London for water rentals it was incidentally mentioned that water consumers benefited considerably by the decision in the celebrated Dobbs case, the effect of which was that certain illegal charges which had been persistently made by the water companies were prevented for the future.

The next meeting of the Commission will take place on Jan. 17th, 1898.

LEICESTER AND SMALL-POX.

(*Concluded from p. 1477.*)

WE have seen how under the "perfected" Leicester method instead of small-pox being treated in the same hospital with other infectious diseases, under the same nurses, and with the use of the same ambulance waggon, all as set forth by Mr. Biggs, the hospital was emptied of scarlet fever almost immediately after the outbreak began, and how within two months the number of cases of scarlet fever in the town had doubled, and how in 1893 over 2300 cases of that disease were notified, in addition to un-notified cases which are estimated to have raised the total to 4000 or thereabouts. But even with regard to small-pox itself the hospital exercised a very direct influence for evil. Before the British Institute of Public Health in 1894 Dr. Priestley read a paper on the Aerial Diffusion of Small-pox from the Leicester Hospital.[1] He began as follows: "The subject for discussion to-day is an important one and I am tempted to give you my own experience somewhat in detail, firstly, because I was at one time *against* the aerial theory of the spread of small-pox from hospitals, and, secondly, because the Leicester experience is practically unique. Whilst admitting all the arguments that may be brought against the aerial theory I am bound to confess that some at least of the facts that I have met with during the Leicester epidemic are only explainable on such a theory." In Newfoundpool, the suburban district in which the hospital is situated, there were fifty-five cases of small-pox, the ratio to population being eleven times as much as in the rest of the town. Minute inquiry showed that twenty of these cases might be attributed to other than hospital infection. Deducting these and making a similar deduction for the rest of the town Dr. Priestley found that the ratio of prevalence in Newfoundpool was twenty-fold that in Leicester exclusive of Newfoundpool. He points out that the greatest infection from the hospital was in the month of June when the weekly average of small-pox cases in the wards was 49. Regarding this inquiry by the medical officer of health Dr. Coupland says: "The thorough investigation made by Dr. Priestley into the origin of the outbreak points strongly to aerial infection from the small-pox wards." We do not for a moment argue that aerial diffusion and other hospital influences are confined to Leicester. They have been shown to exist in much better vaccinated places. It is obvious, however, that they are of very special consequence in a town which trusts to hospital isolation as its mainstay in the prevention of small-pox at the same time that it leaves the surrounding population unvaccinated and open to attack. In Germany, with vaccination and re-vaccination compulsory, hospital infection can afford to be neglected, but not so in Leicester, and the amount of attention requiring to be given to it in any community will, *cæteris paribus*, be in proportion to the neglect of vaccination and re-vaccination in that community.

Looking to all the facts connected with Leicester and its hospital it is not surprising that efforts were ultimately made by the town council to acquire a suitable site for a new structure, but the very circumstances of Leicester were against its success in such a project. There was no ambition on the part of surrounding rural districts to provide a dumping-ground for Leicester small-pox cases, and the experiences of Newfoundpool were not likely to rouse in any neighbourhood a popular agitation in favour of such a scheme. The straits to which the Town Council were driven in this matter are evidenced by the fact that a proposal was seriously debated to build a small-pox hospital on the town sewage farm. The conception of the joint treatment of small-pox cases and sewage is probably unique. In the end the notion was abandoned and Leicester hospital remains where it was. When next small-pox prevails in Leicester it will be interesting to note whether the hospital will furnish the scapegoat for the failure of the method to prevent the prevalence of the disease.

Mr. Biggs insists that quarantine was entirely voluntary and was not universally carried out. At the same time it is not denied that vaccination was more or less practised. Both being optional it seems unquestionable that both must stand or fall together as part of the Leicester procedure. But Mr. Biggs and the *Vaccination Inquirer* take up the paradoxical position that quarantine is to be looked on as an essential and outstanding feature of the alleged "system," but that vaccination, on the other hand, was altogether outside of it. Of course it is open to any anti-vaccinationist to argue that vaccination being powerless it could be no part of any system. That, however, would be too obviously a begging of the question. As a part of Leicester's ways in dealing with small-pox voluntary quarantine and voluntary vaccination must stand or fall together. In view of the strenuous insistence of Mr. Biggs that quarantine was voluntary and that quarantine was of the very essence of the "system" it is utterly useless for him to insist at the same time that vaccination, also voluntary, was no part of the system.

Whether there ever has been in Leicester anything to call a "method" or a "system" is indeed more than doubtful. The system is said to have been begun in 1877. It was not, however, till September 1879 that the town followed the example of Huddersfield, Bolton, Greenock, Nottingham, Jarrow, and Burton-on-Trent in obtaining a local compulsory Notification Act—a most useful thing to do notwithstanding its involving the principle of compulsion which is alleged to be so abhorrent to Leicester as regards both quarantine and vaccination. Dr. Johnston's reports (1877–84 inclusive) throw very little light on the question of whether or not there was a "system." It is true that in his report for 1877, as quoted by Dr. Coupland, Dr. Johnston writes: "As the plan which I adopted in the removal of these cases is novel and may be found useful by officers of health in other towns for preventing the spread of the disease I may be pardoned if I again draw attention to it. In every house where a small-pox case occurred I endeavoured to impress the inmates with the fact that the removal of *all* the members of the family to the hospital was the best course to adopt, not only as regarded their individual welfare, but also that of the town at large, and I am glad to say that all complied with my request, left their infected habitations, and became inmates of the hospital. Altogether twenty-two unaffected cases were thus admitted into quarantine and of these three after admission sickened." Dr. Johnston speaks here of *all* the members of the family—not all exposed persons—being removed and in 1884, writing reminiscently, he says that "all the other members of each infected house" had been removed during the previous eight years. Curiously, however, in his report for 1883 he attributes the town's freedom from small-pox, not to removal of quarantined persons but to the removal of the patients—"not only the immediate reporting, but also the prompt removal to hospital of all the cases as they came under notice." A perusal of his reports year by year does not yield much information, though his belief in vaccination and re-vaccination becomes evident incidentally. Notwithstanding Dr. Johnston's advice as given in 1877, that quarantine should be used for all members of infected families, it is clear that his guidance was not followed. Mr. Biggs explicitly insists that quarantine was voluntary and was not always carried out. He told Dr. Coupland that from 1877 to 1885 inclusive 128 persons were quarantined, but Dr. Coupland remarks that there was no official record, and with regard to the fourteen years 1877–91, during which there were 103 small-pox cases, Dr. Coupland notes that if, as was said, there were only 183 persons quarantined, then the figures "cannot include all those who were exposed to the possibility of infection. ....."

When we come to the small-pox outbreak of 1892–93 the information as to the extent to which vaccination came to be practised is about as vague as this information regarding quarantine. On April 7th, 1893, by which time there had been intimated 157 cases of small-pox, a curiously worded minute was adopted by the Health Committee: "We are also of opinion that all persons who are frequently brought into contact with small-pox patients should adopt all protective measures known to science." The earlier part of this minute indicates by exclusion what is referred to here. Immediate removal of the patient to hospital, quarantine of the other occupants of the house, disinfecting baths, disinfection of clothing, disinfection of the dwelling house and everything in it—all these are specifically dealt with, and these, provided only the hospital isolation and the quarantine are voluntary, constitute what has been called the Leicester system as applied in cases of small-pox. What, then, are the "protective measures known to science" which are "also" recommended to "all persons" specially exposed to infection? Obviously not municipal schemes of drainage and

[1] THE LANCET, Aug. 6th 1894.

water-supply which under the heading of sanitation are sometimes mentioned as having to do with Leicester's proceedings. Such measures would hardly be open for immediate application by persons who in the course of the outbreak were being "frequently brought into contact with small-pox." The plain fact is that under the euphemism of "protective measures known to science" the Leicester Sanitary Committee was advising vaccination and re-vaccination. And the vaccination and re-vaccination, be it noted, were to be practised by "all persons ..... frequently brought into contact with small-pox patients." But who in particular are included under this description? Surely the small-pox nurses, and the hospital attendants, and the ambulance men, and the disinfectors and inspectors, and all the municipal staff who had to do with the epidemic. Thus we find that though in the absence of small-pox Mr. Biggs had scouted and derided our Commissioner's conclusion that Leicester largely owed its protection to the existence of a cordon of vaccination round every case of small-pox, yet when small-pox did attain a serious prevalence in the community this committee (of which Mr. Biggs was a member—he may have been a dissenter from its findings)—this committee recommended that if there were any defects in the cordon they should at once be remedied. There was abundant justification for this action. Before the minute was adopted four attacks and one death had occurred among the six members of the hospital staff who had refused revaccination. The fifth was attacked shortly afterwards (on May 1st). How many of the total staff of forty were appointed after this period we know not (though they cannot have been more than twelve), but all were re-vaccinated and all escaped small-pox. The phrase used in the minute, "all persons who are frequently brought into contact with small-pox patients," covers, of course, more than the municipal service. It seems generally accepted that throughout the town the vaccinations mounted into thousands, but no precise data are available as to how many thousands there were of them. Their value would be all the greater in so far as they included persons under exposure to infection, as recommended by the committee.

Looking to all the facts of the case we are justified in refusing to the various measures taken in Leicester between 1877 and 1894 any name signifying "method" or "system." The proceedings were equally unmethodical and unsystematic. Sir Richard Thorne and Dr. Tomkins gave excellent advice regarding the hospital but it was not followed. Dr. Johnston advocated the quarantine of all exposed persons but it is the boast of Leicester anti-vaccinationists that only some exposed persons were quarantined. All three medical officers, Dr. Johnston, Dr. Tomkins, and Dr. Priestley, recommended vaccination, but here also the recommendation was in part neglected, even as to the hospital staff, until that remarkable minute of the Sanitary Committee was passed. When small-pox attacked Leicester in 1892-93 that which in the absence of small-pox had been described as a method, and a perfected method, and a successful method, was found not to be methodical or perfect or successful. One after another the points were yielded. Payment of wages was made for quarantine, hospital quarantine was abandoned, other diseases were excluded from the hospital, scarlet fever was permitted to work its will in the town, and vaccination, under the cognomen of a protective measure known to science, was recommended by the Sanitary Committee and was practised to an unknown extent in the community.

Without either method or system Leicester had no small-pox in the three years 1889-91 and without either method or system it had 357 cases of small-pox in the years 1892-93. Had it not been for vaccination, even partial and incomplete, and for quarantine, also partial and incomplete, Leicester would probably have had much more small-pox than this. Small-pox, however, as Dr. Collins and Mr. Picton urge in their dissent from the findings of the Royal Commission, is a disease that varies greatly in different epidemics, its fatality-rate as a measure of its intensity showing a very wide range. It happened that Leicester was attacked by what the physicians of last century would have called a mild small-pox, such, perhaps, as they would have used for purposes of inoculation, and this is not to be forgotten in considering the outbreak of 1892-93.

One other important fact has to be mentioned. In his Gloucester report, in the course of a comparison of Leicester and Gloucester, Dr. Coupland says (p. 11): "I believe I am right in saying that during the Leicester outbreak the one thing that gave rise to most anxiety on the part of the authorities was lest the disease should be imported into the public elementary schools. Had this happened, and it was accident rather than foresight that prevented its happening, there is no reason at all for doubting that the larger, better equipped and better organised community might not have suffered to a parallel extent." That is to say, but for this fortunate accident Leicester might have suffered as Gloucester did. And yet, notwithstanding the mildness of the epidemic type, notwithstanding the accidental escape of the schools, notwithstanding the exclusion at the cost of a scarlet fever disaster of all other diseases than small-pox from the hospital, and notwithstanding the ungrudging and ceaseless devotion to duty of Dr. Priestley and his staff, Leicester had 357 cases of small-pox.

Such as it is opponents of vaccination even yet continue to talk of the success of what they continue to denominate the Leicester system. A favourite habit has been to compare the outbreak in Leicester in 1892-93 with the small-pox which Leicester suffered from during the pandemic of 1870-73. These comparisons began very early, long before the end of the 1892-93 outbreak. By March 1st, 1893, the cases known of by the *Vaccination Inquirer* were 123. There had been more, but the editor's latest news was hardly up to date. Regarding the 123 he writes, "That is to say, there have been only little more than one-third of the total number of cases in this outbreak that there were of deaths in the year 1872 when Leicester was a well-vaccinated city." Of course, according to Mr. Biggs' version of the Local Government Board's views on vaccination, Leicester was not a well-vaccinated city in 1872. All whose vaccination was more than ten years old were to be looked on as having reached the end of their protection. But, on the other hand, according to Mr. Biggs in the London *Star*, even those who had not been vaccinated for four-and-forty years were still to be described as well vaccinated. And so the *Inquirer* selects the view that Leicester was well vaccinated in 1872. Later in the outbreak of 1892-93 the cases had reached 146. Mr. A. W. Hutton got hold of this figure somehow and after the outbreak was over inserted it in a booklet addressed in the form of a letter to the Home Secretary as representing the total cases of the outbreak. After this error had been pointed out in a review of the booklet he corrected it in a second edition. Still later the cases were 200 and Mr. Biggs, writing to a local newspaper,[2] went on to calculate that this 200 was "very little more than half the number of deaths in 1872." Finally we reach the end of the epidemic with its 357 cases, and the calculations are altered to suit, it being once more pointed out that there was much less small-pox in Leicester in 1892-93 than in the epidemic of 1870-73. Surely, however, the question ought to be considered as to the proportion between the Leicester contribution to the total small-pox of the earlier epidemic and its corresponding contribution in the later epidemic. All over England there was much more small-pox in the earlier epidemic than in the later. In London, for example, which, like Leicester, suffered from small-pox in both epidemics, the diminution in mortality as between 1871 and 1893 was very considerably greater than the Leicester diminution between 1872 (the epidemic attacking Leicester later than London) and 1893, and this though the disease in 1893 was of a more fatal type in London than in Leicester.

It is not our purpose to follow Dr. Coupland in the many interesting details which he gives as to the behaviour of small-pox among the vaccinated and the unvaccinated in Leicester. As in other outbreaks all over the world the disease differentiated between the two classes in many ways. It attacked much fewer of the former than of the latter in proportion to their numbers in infected households. Among those attacked, comparing age with age, it killed much fewer of the vaccinated than of the unvaccinated, especially at the earlier ages. Such facts were dealt with by us in a series of articles published in the latter part of 1896 following on the issue of the Final Report of the Royal Commission. Nor do we propose to point out how, in spite of its neglect of vaccination, diseases which are often attributed to vaccination—as syphilis and erysipelas—have flourished

[2] Quoted in the Vaccination Inquirer for August, 1893.

much more abundantly in Leicester since it neglected vaccination or have shown an alteration much less favourable in Leicester than have the same diseases in England in corresponding periods. That also we have referred to before.[3] Our present purpose has been to read the writings and the evidence of Leicester antivaccinationists in the light of the facts elicited by Dr. Coupland in the course of his investigations made on the spot at the instance of the Royal Commission and now published as presented to Parliament.

Having seen how the Leicester Myth—usually mis-named the Leicester Method—sped in the town to which it owes its misnomer we shall next see how it sped in Gloucester.

THE INDIAN FRONTIER EXPEDITION.

A STAGE has now been reached which the Indian Government had hoped might have been the final act of the campaign. Sir William Lockhart at the head of his division has marched into General Hammond's camp and joined hands with the Peshawar expeditionary column. As was confidently expected the rear-guards of the returning army did not escape attacks from the Afridi tribes and the march of the troops of General Westmacott's command into the Sturi Khel country was a more or less continuous fight *en route*. We do not hear, however, that the Afridis have shown any sign of submission or that they have accepted the terms offered them in Sir William Lockhart's proclamation. The Afridi campaign under General Lockhart which may be said to have closed for the present by the return of the force to Barkai, its winter quarters on the Bara river, has lasted from October to the present time and has proved one of the most arduous expeditions ever undertaken. Guerilla mountain warfare is always difficult and unsatisfactory, but people in this country can have no idea of the difficulties of this campaign owing to the nature of the country and to the fact that the Indian army has for the first time on record penetrated into parts of the Tirah country.

Our casualties have in the aggregate been heavy, especially of officers, although owing to the enemy's tactics they have not been large at any one time and the two principal passes were taken with a relatively small number of killed and wounded. The health of the large expeditionary force has, on the whole, been very good, although the number of British soldiers invalided from wounds or sickness during the field service has required special arrangements to be made for sending them home during the present trooping season. The medical and hospital arrangements during the frontier campaign have been very satisfactory, but the work of the medical officers has been of an exceptionally hard and anxious character. The difficulties of transport have been immense and the safety and care of the wounded in this respect have occasionally proved very embarrassing to the troops. The effects of the Lee-Metford missile as modified at Dum Dum on bones are described as very severe. The cold in the hills is extreme at night and in the early morning.

According to the latest intelligence General Lockhart's headquarter force, 1st Division, is now concentrated at Baia; General Kempster's brigade at Ilamgude; and the 2nd Division at Mamani. The sick and wounded of these divisions are progressing satisfactorily. There is at present a lull on the Indian frontier; the Kyber pass is quiet and deserted by the enemy; the Oraksais have paid the fines imposed upon them, but the Afridis have as yet manifested no signs of submission.

[3] THE LANCET, Dec. 26th, 1896, p. 1849.

INFIRMARY MEDICAL SUPERINTENDENTS' SOCIETY.—A meeting was held on December 18th at Paddington Infirmary, Harrow-road, W., Dr. T. Ernest Hillier, the medical superintendent, being in the chair. The wards were visited and Dr. Hillier exhibited cases, among others, of Amnesia Verbalis, Post-Hemiplegic Hemichorea, Spastic Paraplegia, Myxœdema, Insular Sclerosis with Optic Atrophy, &c., Male Hysteria, Icterus due to Malignant Disease. After a pleasant and instructive meeting a hearty vote of thanks was given to Dr. Hillier.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Manchester Urban District.—The marriage-rate in Manchester during 1896 reached 18·3 per 1000—the highest rate since 1882, and Dr. Niven thinks that the increased prosperity of the city of which this high marriage-rate is a symptom is due to the augmentation in the amount of shipping passing up the Ship Canal and to the growth of Manchester as a distributing centre. This increased prosperity has resulted in an influx of population and some overcrowding, and Dr. Niven points out that as a consequence the usual estimates of population are probably too low. The general death-rate for 1896 was 22·0 per 1000, the lowest rate on record with the exception of 1894. Although, however, this is so, the position of Manchester relatively to other large towns is in no sense one for congratulation, there being but two towns, Liverpool and Salford, which had during 1896 higher death-rates than Manchester. Dr. Niven, however, points out that in judging of the value of the death-rate of the city it has to be borne in mind that there exist there certain public institutions which attract persons likely to die from the surrounding rural districts. When an analysis is made of the deaths in Manchester during 1896 it is found that there has been a diminution in the number of those from diphtheria, influenza, diarrhœa, tuberculous disease, brain and nervous diseases, bronchitis and other respiratory diseases. In discussing the death-rates in groups of ages Dr. Niven deplores the fact that each town selects its own age groupings and that, as uniformity does not obtain, no comparison is possible. It would seem, however, from a comparison of the Manchester figures with those of London and of England and Wales, that the excess of mortality in Manchester becomes prominent in a marked degree after the age of twenty-five years—i.e., amongst the adult population. Some interesting figures are given in the report before us as to the sanitary condition of closets in houses in which untraced cases of scarlet fever occurred and in commenting upon them Dr. Niven, whose views as to the possible relation between scarlet fever and polluted soil are well known, observes that, whether they show any connexion between scarlet fever and defective closets or not, they manifest a fouling of the ground which should no longer be tolerated. Further observations were made by Dr. Niven in 1896 as to the return cases of scarlet fever and his views that such cases are in the main hospital phenomena—i.e., due to the inhalation and retention of a highly infected atmosphere—would seem to receive further confirmation. The sanitary committee, accepting Dr. Niven's views, utilised certain pavilions for the housing of cases about to be discharged and in the first instance only such cases as were free from such complications as otorrhœa, &c., were admitted. The patients selected for the pavilions in question were anointed with carbolic oil and clothed in uninfected garments before leaving hospital; they were bathed every second day and after bathing rubbed over with carbolic oil. The nose, ears and mouth of each patient were cleansed daily. Dr. Niven entertains little doubt but that these precautions were attended with good results. The medical practitioners of Manchester are fortunate in being enabled by the liberality of the corporation to submit doubtful cases of enteric fever to the Widal test at the hands of Professor Delépine, and we note with pleasure that they have taken full advantage of the opportunity. In this particular the medical men of Manchester are better off than those of London. An interesting inquiry was undertaken by Dr. Niven in 1896 as to the food and feeding of infants, and in this connexion very valuable assistance was afforded by the visitors of the Ladies' Health Committee Society. It was found as a result of the investigation that children living in the poorer districts ceased to be breast-fed at an earlier age than throughout the city generally and that the boiling of milk took place to a greater extent than was anticipated, although it seems that the usual practice is to add unboiled milk to bread boiled in water. In other words, there is no boiling of the milk at all. In the matter of milk Dr. Niven gives an account of the supply of

the city. The annual amount of milk supplied to the city is estimated at 8,640 076 gallons, or 16¼ gallons per head, and a third of this total amount is produced in Manchester. As to the milk produced there it is interesting to observe that from that of cows selected as being markedly tuberculous Professor Delépine succeeded in 25 per cent. of the samples in communicating tubercle to guinea-pigs. Selections such as these are, as Dr. Niven observes, merely indications of the reality of the danger, but they afford no true index of its extent. The Manchester Corporation, however, strive to practise what they preach and we note that the milk for the Monsall Hospital is procured from a herd of cows guaranteed to be free from tuberculosis. Back-to-back houses continue to receive attention in Manchester and they are either closed or altered. There has it appears been of late some dissatisfaction at the action of the sanitary committee in this particular though, as far as we can understand the situation, such dissatisfaction appears to be unreasonable. Obviously the condemnation of this style of house must cause inconvenience to the displaced tenants, more especially when, as at the present time of increased prosperity, houses are in great demand. It is however under these circumstances matter for congratulation that schemes for the erection of labourers' dwellings and for a model common lodging-house in Manchester are now before the Local Government Board. Throughout Dr. Niven's very detailed and highly interesting report one object is kept prominently in view—namely, the substitution of a water-closet system of excrement disposal for that now obtaining which gives rise to much nuisance and also in all probability to sickness and an increased death-rate. It will not be Dr. Niven's fault if a reform in this particular is not soon forthcoming.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6638 births and 4352 deaths were registered during the week ending Dec. 18th. The annual rate of mortality in these towns which had been 19·8 and 20·8 per 1000 in the two preceding weeks declined again last week to 20·6. In London the rate was 21·0 per 1000, while it averaged 20·4 in the thirty-two provincial towns. The lowest rates in these towns were 14·1 in West Ham, 14·2 in Croydon, 14·4 in Cardiff, and 14·6 in Portsmouth; the highest rates were 24·0 in Birmingham, 25·3 in Sunderland, 26·2 in Blackburn, and 27·9 in Norwich. The 4352 deaths included 561 which were referred to the principal zymotic diseases, against 541 and 552 in the two preceding weeks; of these, 247 were referred to measles, 94 to diphtheria, 93 to whooping-cough, 58 to "fever" (principally enteric), 42 to scarlet fever, and 27 to diarrhœa. No death from any of these diseases was recorded last week in Preston; in the other towns they caused the lowest death-rates in Huddersfield, Cardiff, Nottingham, and Bradford, and the highest rates in London, Bristol, Sunderland, Swansea, and Blackburn. The greatest mortality from measles occurred in London, Brighton, Bristol, Swansea, Blackburn, and Oldham, and from whooping-cough in Norwich and Sunderland. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 94 deaths from diphtheria included 63 in London, 6 in Liverpool, 4 in Birmingham, and 3 in Leeds. No fatal case of small-pox was registered last week either in London or in any other of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals on Saturday last, the 18th inst. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 3733, against 3818, 3812, and 3806 at the end of the three preceding weeks; 260 new cases were admitted during the week, against 375, 328, and 319 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London which had been 418 and 468 in the two preceding weeks declined last week to 457 but were 19 above the corrected average. The causes of 69, or 1·6 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Nottingham, Newcastle-upon-Tyne, and in ten other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Liverpool, Preston, Halifax, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns which had increased in the four preceding weeks from 18·5 to 20·2 per 1000 further rose to 20·3 during the week ending Dec. 18th, but was slightly below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·6 in Perth and 15·2 in Leith to 21·0 in Glasgow and 31·3 in Greenock. The 606 deaths in these towns included 29 which were referred to whooping-cough, 14 to diarrhœa, 11 to measles, 10 to scarlet fever, 5 to "fever," and 3 to diphtheria. In all, 72 deaths resulted from these principal zymotic diseases, against 73 and 76 in the two preceding weeks. These 72 deaths were equal to an annual rate of 2·4 per 1000, which was slightly below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough which had declined from 23 and 20 in the three preceding weeks rose again to 29 last week, of which 16 occurred in Glasgow and 8 in Greenock. The 11 deaths referred to measles showed a decline of 5 from the number in the preceding week and included 8 in Glasgow and 3 in Greenock. The fatal cases of scarlet fever which had been 9 and 12 in the two preceding weeks declined again to 10 last week, of which 6 occurred in Glasgow and 3 in Edinburgh. The 5 deaths referred to different forms of "fever" showed a slight further decline from those recorded in recent weeks and included 2 in Glasgow and 2 in Dundee. Of the 3 fatal cases of diphtheria 2 occurred in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 125 and 129 in the two preceding weeks, further rose to 138 last week, but were 32 below the number in the corresponding period of last year. The causes of 46, or nearly 8 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin which had been 25·4 and 25·5 per 1000 in the two preceding weeks further rose to 28·5 during the week ending Dec. 18th. During the past eleven weeks of the current quarter the death-rate in the city has averaged 24·1 per 1000, the rate during the same period being 18·8 in London and 19·1 in Edinburgh. The 191 deaths registered in Dublin during the week under notice showed an increase of 20 upon the number in the preceding week, and included 19 which were referred to the principal zymotic diseases, against 19 and 15 in the two preceding weeks; of these, 10 resulted from "fever," 4 from scarlet fever, 2 from diphtheria, 2 from whooping-cough, 1 from diarrhœa, but not one either from small-pox or measles. These 19 deaths were equal to an annual rate of 2·8 per 1000, the zymotic death-rate during the same period being 3·4 in London and 1·1 in Edinburgh. The deaths referred to different forms of "fever" which had been 12 and 7 in the two preceding weeks rose again to 10 last week. The 4 fatal cases of scarlet fever corresponded with the number registered in the preceding week. The mortality both from diphtheria and from whooping-cough showed an increase upon that recorded in the preceding week. The 191 deaths in Dublin last week included 29 of infants under one year of age and 51 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a slight decline from the numbers in the preceding week. Six inquest cases and 3 deaths from violence were registered, and 77, or more than a third, of the deaths occurred in public institutions. The causes of 7, or nearly 4 per cent., of the deaths in the city last week were not certified.

THE EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 17th, Professor J. Lane Notter, the President, being in the chair. Dr. James Cantlie read a paper on the Physical and Ethnological Conditions under which Leprosy occurs in China, the East Indian Archipelago, and Oceania, his information being the result of personal or postal inquiries made when he was resident in Hong-Kong into the conditions under which the disease occurs throughout this great area.

THE SERVICES.

ARMY MEDICAL STAFF.

SURGEON-CAPTAIN EDYE has embarked for service in Ceylon and Surgeon-Captain Hughes has been appointed to the 1st Life Guards as an attached medical officer.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Major Gimlette (Bengal), Agency Surgeon in Baghelkhand, is appointed to be Residency Surgeon at Indore, vice Surgeon-Colonel Caldecott, whose services have been replaced at the disposal of the Military Department. Surgeon-Lieutenent-Colonel Weir (Bengal), Residency Surgeon and *ex-officio* Assistant to the Resident in Nepal, and Officiating Medical Officer, Kotah and Jhalrapatan, is appointed to be Agency Surgeon in Baghelkhand, vice Surgeon-Major Gimlette. The services of Surgeon-Captain Bidie (Madras), are replaced at the disposal of the Military Department.

THE ARMY MEDICAL SERVICES.

We have already published the purport of the new regulations for admission to the Army Medical Staff, but we may call attention to the subject again because of its importance to intending candidates. There will be in future a combined examination, and a candidate, if successful, will be allowed to take his choice of the medical services—British or Indian—he desires to enter. The regulations state that the examinations for the Army Medical Staff and for the Indian Medical Service will be identical and simultaneous. A candidate will be allowed to enter for both services and if successful to choose according to his place on the list, subject to his being qualified under the regulations special to each service.

THE TROOPSHIP "AVOCA."

Further telegraphic intelligence from the correspondent of the *Daily Mail* states that the troopship *Avoca* had arrived at Natal with 1000 soldiers on board. The correspondent says that according to the statements of the men themselves the treatment meted out to them was better after the vessel had left Capetown, but there was still a marked scarcity of rations. The troops appear to have been packed like herrings in a barrel.

DEATHS IN THE SERVICES.

Surgeon-Lieutenant-Colonel Joseph Wilson, M.D., Indian Medical Service, at Southsea, on the 13th inst, aged forty-nine years.

Correspondence.

"Audi alteram partem."

MR. HALL HAINS'S DEFENCE FUND.

To the Editors of THE LANCET.

SIRS,—The case of **Mr. Hall Hains**, of Shepherd's Bush, who was recently tried at the Central Criminal Court on an unfounded charge of performing an illegal operation, is doubtless within the recollection of the profession. We have followed the case throughout and were convinced from the first of the falsity of the charge. It will probably be remembered that the jury stopped the case by the direction of Mr. Justice Ridley, Mr. Hains leaving the court without a stain on his character. Unfortunately he has been put to very great expense in defending this charge, his costs amounting to over £800. A meeting was held at the address below on Dec. 10th and it was then determined to form an influential committee to aid in raising a fund to help Mr. Hains to defray part of the heavy costs he has had to meet. It is a noteworthy fact that the principal members of the staff of the Westminster Hospital, where Mr. Hains was formerly house surgeon, have joined the committee and subscribed to the fund. An important letter from Sir Edward Clarke, Q.C., M.P., who defended Mr. Hains, which is enclosed by his permission, bears out the utter groundlessness of the charge. We therefore make an earnest appeal to the profession in general for Mr. Hains, who has been shamefully treated and who has been financially embarrassed by having to find this large amount. We append a full list of the committee and subscriptions received or promised up to this date, and

We beg to remain, Sirs, yours sincerely,

JOSEPH SMITH,
Chairman of Committee.
HERBERT CARRE-SMITH,
Hon. Sec. and Treasurer to the Fund.

15, Bath-road, Bedford-park, W., Dec. 20th, 1897.

Committee.

Mr. Joseph Smith, M.R.C.S. Eng. (Chairman).
Mr. W. H. Allchin, M.D., F.R.C.P. Lond.
Mr. J. B. Ball, M.D., M.R.C.P. Lond.
Mr. Alfred Boyce Barrow, F.R.C.S. Eng.
Mr. G. Vere Benson, M.A., M.R.C.S. Eng., L.R.C.P. Lond.
Mr. Henry Disney, B.A., M.D. Dub.
Mr. H. P. Donkin, M.D. Oxon., F.R.C.P. Lond.
Mr. F. de Havilland Hall, M.D., F.R.C.P. Lond.
Mr. J. B. Potter, M.D. Edin., F.R.C.P. Lond.
Mr. Charles Stonham, F.R.C.S. Eng.
Mr. G. Danford Thomas, M.D. Brux.
Mr. James Wilson, M.D. Aberd.
Mr. Alfred Wills, M.D., M.R.C.P. Lond.
Mr. A. P. Woodforde, M.R.C.S. Eng.

Mr. Herbert Carre-Smith, L.R.C.P. Lond., M.R.C.S. Eng., Honorary Secretary and Treasurer,
3, Turnham-green terrace, Chiswick, W.,
to whom subscriptions should be sent. Cheques should be crossed London and South-Western Bank, Shepherd's Bush Branch.

The following is a copy of the letter received from Sir Edward Clarke, Q.C., M P., and is published with his permission.

"Royal Courts of Justice, Dec. 8th, 1897.

"DEAR SIR,—I am not at all surprised that Mr. Hall Hains's brethren in the medical profession should desire to relieve him to some extent from the costs of the recent trial. Each of them is exposed to the danger of having an absolutely false and groundless charge brought against him; of suffering the anxieties of a criminal trial; of having to incur large costs; and of carrying through life the painful recollection of having been the subject of a serious accusation.

"Mr. Hains has fortunately been cleared from every suspicion of wrong-doing and it has been shown that there was not even indiscretion on his part which suggested or framed an excuse for the charge against him.

"I think he deserves the assistance of the medical profession and shall be glad to be allowed to evidence my feeling upon the subject by contributing towards the fund you propose to raise the enclosed cheque for twenty-five guineas.—I am, dear Sir, faithfully yours,

"Mr. Herbert L. Carre-Smith." "EDWARD CLARKE.

List of Subscriptions received or promised.

	£	s.	d.
Mr. S. D. Clippingdale, M.D. Aberd., F.R.C.S. Eng.	1	1	0
Mr. James Browne, M.B. R.U.I.	1	1	0
Mr. A. P. Woodforde, M.R.C.S. Eng	1	1	0
Sir Edward Clarke, Q.C., M.P.	26	5	0
Mr. P. O'H. Brady, M.R.C.S. Eng.	2	2	0
Mr. A. H. Walker, M.B. Edin.	0	10	6
Mr. E. H. Lendon, M.B. Oxon.	1	1	0
Mr. H. B. Donkin, M.D. Oxon., F.R.C.P. Lond.	3	3	0
Mr. James Wilson, M.D. Aberd.	1	1	0
Mr. F. de Havilland Hall, M.D., F.R.C.P. Lond.	1	1	0
Mr. Charles Stonham, F.R.C.S. Eng.	1	1	0
Mr. G. Danford Thomas, M.D. Brux.	2	2	0
Mr. W. A. Wills, M.D., M.R.C.P. Lond.	1	1	0
Mr. J. Brisbane, M.D. Glasg.	1	1	0
Mr. James Barry Ball, M.D., M.R.C.P. Lond.	5	5	0
Mr. Joseph Smith, M.R.C.S. Eng.	1	1	0
Mr. W. H. Allchin, M.D., F.R.C.P. Lond.	5	5	0
Mr. G. Vere Benson, L.R.C.P. Lond., M.R.C.S. Eng.	0	10	6
Mr. Henry Disney, M.D. Dub.	0	10	6
Mr. John Baptiste Potter, M.D. Edin., F.R.C.P. Lond.	2	2	0
Mr. J. Mitchell Bruce, M.D., F.R.C.P. Lond.	2	2	0
Mr. William Wilson, M.B. Edin.	1	1	0
Mr. F. Dingley Pitt, L.R.C.P. Edin.	0	10	6
Mr. A. Hill-Wilson, L.R.C.P. Lond., M.R.C.S. Eng.	0	10	6
Mr. Herbert Carre-Smith, L.R.C.P. Lond., M.R.C.S. Eng.	1	1	0

THE EPIDEMIC OF TYPHOID FEVER AT BELFAST.

(FROM OUR SPECIAL COMMISSIONER.)

(*Concluded from p. 1625.*)

To sum up the position at Belfast it has been seen that the water-supply, though exposed to contamination on the gathering grounds, is very carefully stored and filtered. It may therefore be said that the water-supply of Belfast is not more dangerous than that of London. Both depend for their purity on prolonged storage and efficacious filtration. Nevertheless this water-supply will soon be abandoned and it has been decided to collect water from the Mourne Hills.

These range from the sea level to a height of 2500 feet and stretch across the direction of the prevailing rain-bearing winds. From three collecting districts on these hills it is calculated that 25,500,000 gallons of water could be obtained per day. A conduit thirty-eight miles in length will have to be constructed comprising a tunnel three-quarters of a mile in length, twenty-seven miles of cut and cover, and ten and a quarter miles of iron piping. The gathering ground is considered one of the finest that could possibly be found, consisting of clean, steep, rocky slopes, carrying only a scanty vegetation and remarkably free from peat bog. The reservoirs will be of great depth and therefore will prevent the growth of water weeds. The cost of these works is estimated at £610,000, or £61,000 for each million gallons supplied daily, and the water is so pure that it will not require filtration. Indeed, the only fear is that in consequence of its great purity it may affect the lead pipes. As soon as, however, the pipes have been in use for a little while it is thought that this action will cease. Also as the water has to pass through cut and covered conduits contact with mineral matter containing lime will thus be established and the solvent effect upon the lead will be prevented. This, it is pointed out, resulted when the Loch Katrine water was conveyed to Glasgow. In any case the water could be rapidly passed through some slightly calcareous sand, not for the purpose of purification, but to add about a degree of hardness to the water and thus render it inactive on fresh surfaces of lead. Of the three gathering areas the first or Annolong area comprises 5870 acres and has a population of 150 persons with 20 head of cattle. The making of the reservoir on this site will cause the removal of the whole of the population and their cattle. On the Kilkeel area, which is of 5250 acres, there are no cattle and no inhabitants and on the third or Eagle Mountain area, which extends over 5570 acres, there are 250 inhabitants and 40 head of cattle. This latter area is the farthest from Belfast and the last to be appropriated and by that time doubtless measures will be adopted for dealing with its inhabitants. With these facts before us there remains but little more to be said on this subject. No one disputes the purity of the new water-supply which is about to be brought to the town and it may therefore be said that the water question is settled so far as the supply is concerned. This is not the case with regard to the detail of its delivery in the houses.

There are still innumerable cisterns in Belfast so placed that the water they contain could easily be contaminated. Thus but a few days ago a large accumulation of putrid matter, including some decomposed rats, was found in the cistern which provided the drinking-water of a restaurant situated in a central and much frequented part of the town. This cistern was placed under the roof and it is supposed that rats in trying to reach the water accidentally fell in and were not able to climb out again. As already mentioned many cisterns are placed just over privies and ashpits and as there is no covering the dust blown out of the ashpits falls into the water. But in the building of houses the object is too often to save money rather than human lives. Ever since 1840 there has been water enough to provide water-closets, but privies are much cheaper. Nor was there at any time any serious difficulty in augmenting the water-supply if the general adoption of the water-closet system had occasioned an increased demand. But it must be borne in mind that the water commissioners are elected directly by the ratepayers and that they levy their own water-rates. This authority is quite independent of the municipality but, like the municipality, has been composed in a large measure of persons interested in household property and therefore opposed to such reforms as might entail extra expenses. Thus strenuous opposition was made against proposed by-laws which insisted on the employment of only the highest class water fittings. The purpose was to prevent water waste, but indirectly such regulations have a good effect on the public health. Cheap closets get out of order and are therefore not only wasteful of water but dangerous to health. Nevertheless as some master plumbers were elected as water commissioners they objected to the interference in their work which the proposed by-laws would bring about and they succeeded in retarding the adoption of these reform measures for several years. Thus it is that the by-laws in question have been in force for only five years and the town consequently suffers greatly from the bad plumbing work and the inferior fittings to be found in the houses built before these new enactments. Thus, for instance, to ventilate soil-pipes in many cases an inch-pipe only has been introduced and carried up to the roof. Of course this is too small to be of any good.

Before leaving this question it may not be out of place to mention that my description of Dr. Percy Frankland's reports on the water-supply of Belfast has been utilised at Lynn by the adversaries of the new water-supply scheme for their town. It is urged that as the water-supplies of both London and Belfast are liable to contamination but are rendered safe by storage and careful filtration, so also might the polluted waters of the Gaywood River at Lynn be rendered pure by similar measures. Yet, as I remarked at the time, there can be no doubt that Londoners would very much prefer to obtain, were it possible, a water-supply that is pure at its origin and stands in no need of filtration. That is precisely what, in spite of strenuous opposition, is going to be done at Lynn and what the town of Belfast is going to spend £610,000 to achieve. At Lynn there are no storage reservoirs or filters; at Belfast there are reservoirs and filters as perfect as those used for the London supply, yet these are to be abandoned and at great cost water is to be brought to the town from a distance of thirty-eight miles that shall be so pure as not to need filtration. The action taken by the town of Belfast is a sufficient answer to the objections raised in Lynn. No town would voluntarily depend on filters for its safety. There is always the possibility of an accident such as is described by Koch as having occurred at Altona.

With regard to the general sanitary condition of Belfast its defects are proved by the fact that after strong rains there is a general improvement in the health of the population. This shows that there must be a great accumulation of filth which is not otherwise removed. That this should be so is only natural if we bear in mind that the sanitary staff is altogether undermanned. Dublin, with a smaller population, has a much larger staff. Also, it must be acknowledged that some of the sanitary inspectors, &c., at Belfast were not always selected for their technical competence, but rather because they held a prominent position in church or chapel and had been able to render eminent service at election times. This grievance has now, however, been remedied by compelling all inspectors to pass an examination, but its evil effects in the past are felt to this day. It may, however, be pointed out that in certain districts where theoretically the population should be very unhealthy there is comparatively little sickness. On inquiry it will be seen there is a good explanation of this fact. The men who live here are generally in the prime of life, they are engaged in shipbuilding, and are earning good wages. One or more such districts are built on the former dumping ground for the contents of privies and ashpits, but they are also particularly exposed to fresh sea breezes. Then the ground on which the houses stand has been carefully cemented over and as these houses are of recent construction the cement has not yet had time to crack. Nevertheless I have pointed out that the general death-rate and more particularly the zymotic death-rate of Belfast is particularly high. Mr. A. H. Smee, chief medical officer of the Gresham Life Assurance Company, has published statistics setting forth the proportion of deaths from typhoid fever which have occurred in 82 of the largest towns of Europe during the first nine months of the current year. Belfast stands far and away at the head of the list with 965 deaths per million of the population. Namur, in Belgium, comes next with a proportion of 434 per million; then Malines with 351; and Borgerhout, a suburb of Antwerp which suffered greatly during the last cholera epidemic, follows with 310 per million. In the United Kingdom, after Belfast, Dublin comes next with 290 and is followed closely by Havre in France with 277 deaths per million. Then it may be noted that the proportion of deaths from typhoid fever per million of the population is 210 for Salford; 185 for Portsmouth; 182 for Sheffield, Sunderland, and Norwich; 180 for Glasgow; 79 for London; 77 for West Ham; 72 for Edinburgh; and 71 for Paris. Lynn and Maidstone being but small towns are not included in this calculation.

Standing thus in such unenviable prominence Belfast well deserves to be called to order by the united voice of civilisation. The 20,000 houses that have no back passages and where it is necessary to carry the contents of the privies and ashpits through the inhabited rooms are a disgrace to the

century in which we live. Such barbarism should at once be abolished. But this is only the most sensational aspect of a general and revolting condition of filth and neglect, of weak administration and of corrupt authority. While the jerry-builder, the land-grabber and speculator in unhealthy dwellings govern the elections such evils must of necessity arise. But there has been some awakening on the part of the population. The newly-elected town council contains strong reforming spirits, and it is possible to hope that effective measures will be adopted and enforced.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Forthcoming Meeting of the British Medical Association in Edinburgh

MUCH of what might be called the intra-professional activity of the profession in Edinburgh this winter is occupied with arrangements for the meeting of the British Medical Association in July next year. These promise to be made in good time, for the various committees have set to work with much energy and with the determination to make the meeting worthy of the city.

Anderson's College Medico-Chirurgical Society, Glasgow.

Professor John Edgar presided at the fiftieth annual dinner of Anderson's College Medico-Chirurgical Society held in the Windsor Hotel, Glasgow, one evening last week. In giving the toast of the evening the chairman said they had assembled to celebrate the jubilee of the society. In the year 1847 the society first saw the light, and was called by the pretentious title of "The Medical and Surgical Institute of Glasgow."

Glasgow University.

At the forthcoming conference of the Students' Representative Councils (Scottish Universities) to be held at Glasgow resolutions are to be submitted in favour of the establishment of a single qualification entitling to medical practice and recommending that fifth-year students who have passed their examinations shall be granted the status of qualified assistants. The Councils will also be asked to vote for an increase of the restrictions upon the sale of patent medicines and for the compulsory prohibition of prescribing by chemists and dispensing by medical men.

Glasgow Maternity Hospital.

Mr. J. M. Munro Kerr, M.B., C.M. Glasg., has been appointed assistant obstetric physician to the hospital. His promotion leaves a vacancy in the medical charge of the West-end branch and the directors have decided to divide the duties into an in-door and an out-door department. Candidates for the latter are to be "lady graduates." In this way the convenience of the Queen Margaret College students will, it is hoped be met.

Aberdeen Medico-Chirurgical Society.

The annual dinner, which took place in the society's hall on the 17th inst., was well attended and proved to be a pleasant meeting. Dr. J. Mackenzie Booth presided, and Dr. Alexander F. Proctor was croupier. Professor Stephenson replied to the toast of The University and Medical School.

Dec. 21st.

FREEMASONRY: *The Sancta Maria Lodge.*—At the first meeting of the Sancta Maria Lodge, No. 2682, held at Mark Masons' Hall on Dec. 13th, W. Bro. E. Owen, Deputy Master in the chair, the following gentlemen were initiated into Freemasonry:—Mr. George P. Field, Dr. J. P. B. Wills, Dr. W. J. Harris, Mr. A. Thorn, Mr. G. Murray, Mr. H. A. Kidd, Mr. H. S. Collier, Mr. R. H. Powers, Dr. R. P. Smallwood, and Mr. G. W. Ridewood.

LITERARY INTELLIGENCE.—The *Laryngoscope*, a monthly journal devoted to diseases of the nose, throat, and ear, will be issued simultaneously in Great Britain and America commencing in January next. The European edition will be under the charge of Dr. St. Clair Thomson. The journal contains sixty-four pages and devotes much space to original communications on practical subjects. The price is 1s. per month or 10s. per annum. The European agents are Messrs. John Wright and Co., Bristol.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Ulster Medical Society.

THE second public meeting was held on Dec. 9th, the President, Dr. J. A. Lindsay, being in the chair, when Dr. Austin and Dr. John Campbell read communications constrasting the results of midwifery practice as seen by the former in private and by the latter in hospital practice. An interesting discussion followed in which Professor Byers, Dr. Kevin, Dr. Rusk, and Dr. Wadsworth took part.—Dr. Mitchell read notes on Thiersch's method of skin-grafting and showed three cases treated in this way.—Dr. Kirk read notes of a case of Patent Vitello-Intestinal Duct and Dr. Tennant showed microscopic specimens from a peculiar case of Cancer of the Breast.

Accident to Dr. Thompson of Omagh.

On Nov. 8th, as Dr. Thompson was driving home in his own vehicle from the Omagh station, close to eleven o'clock at night, the horse bolted and smashed one of the wheels of the carriage. As a result Dr. Thompson and his man were thrown to the ground. The man was only slightly injured but Dr. Thompson received several cuts on the face and a lacerated wound extending from the right eye to the top of the head. After remaining for several hours in Mr. Stone's house, where he was at first taken, Dr. Thompson was able to proceed home. It is hoped he will soon be able to resume practice.

Ballymena Cottage Hospital.

The annual meeting was held on Nov. 9th and from the report I find that £382 has been subscribed to build a suitable surgery in connexion with the hospital. Ninety-seven intern and fourteen extern cases were treated during the past year. There were thirty cases of operation. The total increase was £507 (an increase of £50 on the previous year), the expenditure being £437.

Londonderry Lunatic Asylum.

Dr. O'Farrell, Inspector of Lunatics, reports favourably on the management of the asylum, which, he writes, is at once efficient and exemplary. He says the asylum is most seriously overcrowded, while the amount of ground attached to it is so limited as to interfere in some respects with the patients' proper employment and recreation. He hopes the new block will be ready for patients early next summer when he trusts the new asylum will have been commenced.

Death of Mr. Michael M'Gee, M.D. Glasg., J.P.

I regret to announce the death of one of the older practitioners of Belfast, which took place at his residence in that city on Dec. 13th. Dr. M'Gee graduated M.D. of Glasgow in 1846 and practised for a lengthened period in Belfast where he was a prominent figure. He was a J.P. for the city and presided regularly at the police courts. For a considerable time he has been in delicate health.

Dec. 20th.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations and conformed to the by-laws and regulations, have been admitted Fellows of the College in order of their seniority as Members in accordance with the provisions of the charters:—

Freeland, Ernest Harding; Membership dated April 28th, 1884.
Blair, Charles Samuel; Oct. 24th, 1884.
Barnett, John Edward Sewell; Aug. 2nd, 1888.
Cholmeley, William Frederick; Nov. 8th, 1888.
Morland, Charles Henry Duncan; Nov. 8th, 1888.
Manning, Guy Eugene; Jan. 8th, 1889.
Martin, Albert Edward; Nov. 14th, 1889.
Bowring, Walter Andrew; May 12th, 1892.
Strange, Arthur; July 28th, 1892.
Hayes, George Constable; Nov. 10th, 1892.
Phillips, Llewellyn Caractacus Powell; July 30th, 1894.
Dickinson, Harold Bertie; Nov. 8th, 1894.
Miskin, Leonard John; May 9th, 1895.
Pearson, Maurice Grey; May 9th, 1895.
Ashdowne, Wallace Charles George; July 29th, 1895.
Evans, Arthur Henry; July 29th, 1895.
Dyball, Brennan; Nov. 14th, 1895.
Maxwell, John Preston; Feb. 13th 1896.
Smith, James; Feb. 13th, 1896.
Christopherson, John Brian; March 12th, 1896.
Pendlebury, Herbert Stringfellow; Nov. 12th, 1896.

Three other gentlemen passed the examination, but not having

attained the legal age of twenty-five years will receive their diplomas as Fellows at future meetings of the Council. Nineteen gentlemen were referred—thirteen for six months and six for one year.

The following gentlemen having passed the necessary examinations have been admitted Licentiates in Dental Surgery:—

Alder, James Urquhart.
Ashby, Cecil.
Betts, George Owen.
Bevington, Ernest.
Billing, Fred.
Bonnalie, Stanley.
Bradford, Sydney.
Bromley, Thomas William.
Butler, Hubert Arnold George.
Canning, Henry Albert Ellis.
Clark, John Kenneth.
Corin, Frederick Ernest.
Crombie, James Melville Paterson, M.B. and M.S. Aberd.
Dorrell, Harry Leonard
Dowsett, Ernest Blair.
Drake, Arthur.
Gudgeon, Henry Halliday.
Harris, Aubrey Hasting.
Hislop, John William.
Holford, Sidney John.
Hulme, Thomas Haylock.
Joseph, Edgar.
Kempe, Arthur Marshall.
Kendrew, Augustus.
Kenyon-Jeffes, Harry.
Manning, Robert Harris.
Marshall, Graham.
Miller, Thomas Henry, M.B., Ch.B. Vict.
Moore, Robert Henry.
Morris, Henry James.
Murphy, James Montague.
Musgrove, Edward Hugh.
Parrott, Arthur Hughes.
Peck, Alfred Gerard.
Pedley, George Aston, M.R.C.S. Eng.
Pettey, James Bertie.
Preston, Charles Henry, F.R.C.S. Eng.
Redpath, Stuart James.
Round, John Cornwall, M.R.C.S. Eng.
Schlesinger, William Augustus.
Shields, Ernest Thompson.
Smith, Victor George.
Stainer, Courtenay Biffin.
Storey, George William.
Sumerling, Bertram James.
Thomas, Charles Browne.
Tilley, Edgar.
Trembath, William James.
Turner, Edward Ernest.
Walker, Alfred William.
Walker, Arthur West.
Ward, Frank.
White, Maurice.
Wilmore, Walter.
Wing, John Clifford.
Wood, Charles Carey.

Twenty gentlemen were referred to their professional studies for six months and one for one year.

UNIVERSITY OF CAMBRIDGE.—**At the examinations for medical and surgical degrees, Michaelmas term, the following candidates were successful:—**

FIRST EXAMINATION.

Part I. Chemistry and Physics.—Aldridge, Christ's; Armitage, Emmanuel; Beddow, Christ's; Bulley, Emmanuel; Butterworth, B.A., Christ's; Causton, B.A., Emmanuel; Cleminson, Gonville and Caius; Collingham, King's; Colt, Sidney-Sussex; Cooper and Cotes-Preedy, Emmanuel; Cutler, B.A., Clare; S. Dixon, Trinity; Drapes, Sidney-Sussex; Drew, R. S. Pembroke; Droop, Trinity; Ellett, Catharine; Ellis, Downing; H. Falk, King's; Frankenburg, Emmanuel; D. H. Fraser, Gonville and Caius; Gardner-Medwin, Trinity; Ghosh, St. John's; Gibb, Sidney-Sussex; M. F. Grant and Everard Harrison, Trinity; P. Harrison, B.A., Christ's; Harry, Jesus; A. G. Harvey, B.A., St. John's; Heath, Trinity; W. R. Higgins and Horsley, Gonville and Caius; Kerr, Christ's; Luker, Pembroke; O. May, St. John's; Mollison, King's; Muil, B.A., Gonville and Caius; Murphy and Neatby, M.A., St. John's; Owen, Gonville and Caius; Page, Corpus Christi; Plowright, St. John's; R. M. Ranking and G. L. Ranking, Pembroke; Rees, Downing; Slade, Clare; Thresher, Gonville and Caius; Ticehurst, St. John's; Toppin, Gonville and Caius; A. C. Warren, Emmanuel; West, St. John's; Western, Pembroke; and Wiltshire, Clare.

Part II. Elementary Biology.—Akerman, Gonville and Caius; Bacon, Christ's; Bulley, Emmanuel; Butterworth, B.A., Christ's; J. G. Castellain, Trinity; Cleminson, Gonville and Caius; Colt, Sidney-Sussex; Crowfoot, Emmanuel; Curl, Christ's; Day and Donnell, Gonville and Caius; Drapes, Sidney-Sussex; Ellett, Catharine; Fox, B.A., Emmanuel; D. H. Fraser, Gonville and Caius; Ghosh, St. John's; Gibb, Sidney-Sussex; Graham, Jesus; M. G. Grant, Trinity; Griffin, Peterhouse; Hall, Pembroke; P. Hardy, Trinity Hall; Harris and P. Harrison, B.A., Christ's; Hepburn and W. H. Hills, Pembroke; Hirst, Gonville and Caius; Hudson, Clare; Irving, St. John's; Leech, Clare; Leslie, Pembroke; Littlejohns, Gonville and Caius; C. G. Martin, Downing; O. May, St. John's; Molteno, Pembroke; Newington, Gonville and Caius; Page, Corpus Christi; Panton, Trinity; Patrick, Christ's; Pellow, St. John's; Pope, Trinity; Prince, Emmanuel; Skene, St. John's; Toppin, Gonville and Caius; Western, Pembroke; C. F. O. White, Trinity; E. K. Williams, Gonville and Caius; W. V. Wood, B.A., and Worthington, Clare; S. L. O. Young, Christ's; and Young, B.A., Emmanuel.

SECOND EXAMINATION.

Part I. Pharmaceutical Chemistry.—H. Ackroyd, Gonville and Caius; Barton, B.A., Pembroke; Beckett, B.A., H. Selwyn; Burroughes, Trinity; Butler, B.A., Emmanuel; H. J. Cardew, Clare; Carey, B.A., Emmanuel; F. J. Child, B.A., Christ's; Cooper, Jesus; Crowther and Dally, St. John's, Davies-Colley, B.A., Trinity; Dodd, Gonville and Caius; Dudley, H. Selwyn; Elliott, Emmanuel; W. I. Evans, St. John's; Freshwater, Trinity; Geoghegan, B.A., Gonville and Caius; Goss, Jesus; Goyder, St. John's; Greene, Downing; C. H. Gregory, Emmanuel; Guthrie, King's; Harnett and A. W. Harvey, St. John's; H. G. L. Haynes, Downing; Henderson, B.A., Gonville and Caius; Hocken, Clare; Holtzmann, Christ's; A. C. Ingram, St. John's; E. G. Kelgreen, Kidd and Ledward, Trinity; Leighton, Leveaux, and Lloyd-Jones, St. John's; Loveday and Lucas, Gonville and Caius; Matthews, Downing; Murray, B.A., St. John's; Muspratt, Christ's; Nicholson, King's; Norman, B.A., St. John's; Paton, B.A., Gonville and Caius; Pellier, B.A., Clare; Ricket, King's; Riddle, Peterhouse; H. J. Robinson, St. John's; Rolfe, Clare; R. N. Salaman, B.A., Trinity Hall; Scarborough, St. John's; C. A. St. J. Scott, B.A., Trinity; Sephton, B.A., Gonville and Caius; Simpson, King's; Snell, B. Spearman, and Spurrier, Gonville and Caius; W. M. Strong, B.A., Trinity; Tuck, Emmanuel; Ward, Clare; L. Wigram, Trinity; A. G. E. Wilcock, Gonville and Caius; H. C. Williams, B.A., Pembroke; H. M. Wilson, Trinity Hall; Woolley, King's; and Wylie, Pembroke.

THIRD EXAMINATION.

Part I.—W. C. Ambrose, M.A., Clare; Brincker, B.A., St. John's; Carsberg, B.A., Gonville and Caius; F. P. Cayley, B.A., Trinity; Collingwood, B.A., Gonville and Caius; Corner, B.A., Sidney-Sussex; Delbruck, B.A., King's; E. R. Hunt, B.A., Trinity; M. B. Johnson, B.A., Trinity Hall; E. K. Le Fleming, B.A., Clare; Levick, B.A., Jesus; Lidderdale, Trinity; C. S. Myers, B.A., Gonville and Caius; Peatling, B.A., Magdalene; Percival, B.A., and Reissmann, B.A., St. John's; Sandilands, B.A., Trinity; Sargent, B.A., St. John's; and Tucker, B.A., Gonville and Caius.

SOCIETY OF APOTHECARIES OF LONDON.—**The following candidates have passed in the subjects indicated:—**

Surgery.—M. E. Bennett (Section I.), Royal Free Hospital; J. C. R. Curtis, University College Hospital; R. H. Hill, New York and Middlesex Hospital; E. J. Jennings, Edinburgh; and P. D. Pywell, St. Thomas's Hospital.

Medicine.—F. M. Aldred, Liverpool; C. J. Barnes, King's College Hospital; A. L. Bartram, Cambridge; M. E. Bennett (Section I.), Royal Free Hospital; A. D. Evans, Edinburgh; J. H. C. Fegan, Charing-cross Hospital; M. P. Gabe, Middlesex Hospital; B. Lewitt, St. Mary's Hospital; P. C. Maitland, Middlesex Hospital; G. L. Meredith, London Hospital; H. Munro, Guy's Hospital; and G. C. Walker, Liverpool.

Forensic Medicine.—C. J. Barnes, King's College Hospital; A. L. Bartram, Cambridge; M. E. Bennett, Royal Free Hospital; A. D. Evans, Edinburgh; J. H. C. Fegan, Charing-cross Hospital; B. Lewitt, St. Mary's Hospital; P. C. Maitland, Middlesex Hospital; G. L. Meredith, London Hospital; H. Munro, Guy's Hospital; B. J. Nolan, Dublin; A. H. Turner, London Hospital; and G. C. Walker, Liverpool.

Midwifery.—A. D. Evans, Edinburgh; J. H. C. Fegan, Charing-cross Hospital; E. J. Jennings, Edinburgh; G. L. Meredith, London Hospital; B. J. Nolan, Dublin; C. C. Pratt, St. George's Hospital and Bristol; and G. C. Walker, Liverpool.

The diploma of the Society was granted to the following candidates entitling them to practise Medicine, Surgery, and Midwifery:—Messrs. R. H. Hill, E. J. Jennings, G. L. Meredith, P. D. Pywell, and A. H. Turner.

A CHEQUE for £1000 from Mr. Alexander Peckover, Lord-Lieutenant of the county of Cambridgeshire, has been received by the Vice-Chancellor of Cambridge University for the fund for re building the School of Medicine and Surgery attached to the University.

PRESENTATIONS TO MEDICAL MEN.—Mr. George C. Milligan, M.B. Aberd., of Forres, has been the recipient of a cheque for £127 and an album containing the autographs of the subscribers on the occasion of his leaving Forres to recruit his health abroad. He has practised there for upwards of eight years and during that period has gained the esteem and affection of all classes of the community.—At a numerously attended meeting at the Memorial Hall, Wandsworth, on the 8th inst. Mr. T. E. Hughes, M.D. Edin., of Wandsworth, was presented with a gold watch which bears a suitable inscription and an illuminated address by the members of the Wandsworth Provident Dispensary as tokens of their appreciation of the services rendered by him during the five years of his medical superintendentship. This testimonial was subscribed to by every member of the dispensary, including the poorest inhabitants of Wandsworth.—Dr. and Mrs. Hall, of Bodenham, near Leominster, were on Dec. 8th presented with a silver salver and illuminated address by the parishioners and people of the neighbourhood on the occasion of their departure.—At the monthly meeting of the Bristol Medico-Chirurgical Society held at University College, Bristol, last week Mr. Shaw, M.B. Edin., the president, presented an address to Mr. D. S. Davies, M.D. Lond., the medical officer of health for the city and port of Bristol, and to Mr. J. C. Heaven, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H., assistant medical officer of health for Bristol port. The address, which was illuminated and handsomely bound, was signed by 172 members of the profession residing in Bristol and Clifton who were anxious to express their high appreciation of the excellent services rendered by the medical officers of health during the late epidemic of typhoid fever. Dr. E. Long Fox read the address which was feelingly acknowledged by both gentlemen.—Mr. C. Angus, M.B., C.M. Aberd., superintendent of the Royal Infirmary, Aberdeen, and for many years senior assistant of the Royal Asylum, Aberdeen, was presented, on the 14th instant, by the officials and nurses of the asylum on the occasion of his approaching marriage with a silver tea and coffee service as a token of their esteem and good wishes.

PLYMOUTH MEDICAL SOCIETY.—At the meeting of this society on Dec. 8th, Dr. Aldridge, President, being in the chair, Mr. Aldous, assistant surgeon to the South Devon and East Cornwall Hospital, read a paper on Organic Urethral Stricture. After describing the anatomy of the urethra in its healthy state he discussed the pathological condition consequent upon attacks of urethritis; with regard to the white race he stated that stricture resulted as a sequela to urethritis in the proportion of 1 in 8, whilst in the negro race it was about 1 in 23. As to treatment Mr. Aldous urged a plea for internal urethrotomy in certain cases which, unsuitable for slow or continuous dilatation, were often treated by external urethrotomy; given the strictest surgical cleanliness the mortality of internal urethrotomy should not exceed 2 per cent Mr. Aldous advised division of the stricture when situated in the deep urethra by incising the roof and quoted cases in which he had performed the operation both under a general anæsthetic and with cocaine 20 per cent. injected per urethram. Only trifling hæmorrhage followed. Cases had been recorded where severe bleeding followed owing to wounding the dorsal vein of the penis or the plexus of Santorini, but he thought that this accident was not likely to happen if the handle of the urethrotome were not unduly depressed. With regard to the treatment by electrolysis the great drawback was the length of time, extending over some weeks, necessary for dissolving the stricture so that few patients would submit to the process.—The paper was discussed by Dr. Fox, Dr. Webber, Mr. Woollcombe, and Mr. Whiteford.—Mr. Woollcombe proposed, and Dr. Fox seconded, a vote of thanks to Mr. Aldous, which was carried by acclamation.

DIPHTHERIA IN LONDON. — During the four-weekly period ended on Dec. 4th—the November period—there was a considerable decline alike in number of notified cases of diphtheria and of registered deaths from the disease in the county of London as compared with the four-weekly —October—period ended on Nov. 6th. In the October period all the forty-three sanitary areas were invaded and all save one in the November period. In the former 1336 notified cases yielding a weekly average of 334 (with successive weekly numbers of 351, 363, 319, and 303) gave place to 1119 notified cases in the November period, with a weekly average of 280 cases and successive weekly totals of 279, 301, 287, and 252. In the October period there were ten districts with 50 cases and upwards each and an aggregate of 700 notifications; in November there were 8 such districts with an aggregate of 513 cases, whilst other 8 districts had only 31 notified attacks in all. The 224 registered deaths in the October period, yielding a weekly average of 56 and a case mortality on notifications of 16·8 per cent, gave place to 198 registered deaths or 49 weekly in the November period, and the case mortality became 17·7 per cent., a higher rate on fewer cases. In the Outer Ring of the Metropolis the registered deaths from diphtheria in the October period were 20, 16, 21, and 17 in the successive weeks, making a total of 74; and in the several weeks of the November period 26, 11, 14 and 15, making a total of 66. In the week ended on Dec. 11th, there were 294 notified cases of diphtheria in London county area and 58 registered deaths; whilst in the Outer Ring there were other 20 deaths registered from the disease.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 1st, the President, Dr. William Vickary Snow (Bournemouth), being in the chair.—Dr. W. S. Hedley (London) exhibited an Electrical Radiant Heat Apparatus used for treatment of neuralgia, arthritis, and gout by which any part of the body could be subjected to the influence of dry heat.—Dr. John A. Shaw-Mackenzie read a paper on the External Methods of Administration of Mercury in the Treatment of Syphilis systematically advocated and practised in this country during the last forty years by Mr. Henry Lee. He also drew attention to the unsuspected syphilitic factor in some of the pelvic conditions and invalidism in parous women as also in single women the subjects of inherited syphilis, emphasising the value of mercurial treatment in certain cases, especially in subinvolution after abortion and delivery.—Dr. Septimus Sunderland (London) said that obscure pelvic exudations in women were often treated by mercury and iodine as resolvents without syphilis being suspected and the deposits often disappeared; it was therefore possible that in some cases the effect was produced by those drugs acting on syphilitic poison.—In reply Dr. Shaw-Mackenzie pointed out that it was not the sweat bath but the fumigation bath which he used, so that the skin should be able to absorb the calomel vapour.—Dr. Solly (Harrogate) read a paper on the Treatment of Syphilis at Harrogate, the chief points to which attention was drawn being (1) that treatment by the external use of mercury (especially by inunction) combined with sulphur baths and water, known as the Aachen (Aix-la-Chapelle) System, had been for many years successfully carried out at Harrogate; and (2) that by reason of the variety of diseases treated at Harrogate a patient going there did not stigmatise himself as the victim of syphilis as he practically did if he went to Aachen.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ADAMS, E. W., L.R.C.P. Lond., M.R.C.S., D.P.H., has been re-appointed Medical Officer by the Slough Urban District Council.

ADAMS, J., M.B., C.M. Glasg., has been appointed Medical Officer for the parishes of Dyke and Moy.

ARBUCKLE, H. W., M.D. Aberd., L.R.C.P. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health by the Thorne District Council.

BUTCHER, H. O. F., M.R.C.S., has been re-appointed a District Medical Officer for the Ware Union.

CAMPBELL, H. J., M.D. Lond., M.R.C.P., M.R.C.S., has been appointed to the joint Lectureship in Forensic Medicine in the Medical Department of the Yorkshire College.

DALBY, A. WILLIAM, L.R.C.P., L.R.C.S. Edin., has been appointed Deputy Medical Officer *pro tem.* for the Nunney District by the Frome Board of Guardians.

FRASER, P., M.D. Edin., B.Sc. (Public Health), has been appointed Medical Officer of Health by the Llanrwst Urban District Council.

GARSTANG, T. W. H., M.R.C.S., has been re-appointed Medical Officer by the Northwich Council.

GERVIS, CHARLES B., M.R.C.S., L.R.C.P., has been appointed Assistant Medical Officer for the Colney Hatch Asylum, N.

HULKE, S. BACKHOUSE, F.R.C.S. Eng., has been appointed Surgical Registrar to the Middlesex Hospital, vice Mr. T. H. Kellock, appointed Assistant Surgeon.

MATHEW, G. PORTER, M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Registrar to the Chelsea Hospital for Women, Fulham-road, S.W.

SIMPSON, G. A. G., M.R.C.S., has been re appointed Medical Officer of Health by the Acton District Council.

SMITH, LEWIS A., M.B., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Medical Tutor to the London Hospital.

SKINNER, STEPHEN, M.B., C.M. Aberd., M.R.C.S., has been appointed Medical Officer of Health *pro tem.* for the Bedminster Rural District, vice George Adams, deceased.

WESTCOTT, W. G., L.R.C.P., M.R.C.S., has been appointed a House Surgeon to the Chichester Infirmary.

WILSON, GEORGE R., M.B., C.M. Edin., has been appointed District Medical Officer and Public Vaccinator for the No. 1 District of the Blackburn Union, vice T. W. Gregson, deceased.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

CHELSEA, BROMPTON, AND BELGRAVE DISPENSARY, 41, Sloane-square, S.W.—Honorary Visiting Surgeon for the Western District.

COUNTIES ASYLUM, Carlisle.—Junior Medical Officer. £20 and board. Apply to Dr. Campbell, Garlands, Carlisle.

COUNTY BOROUGH OF OLDHAM.—Medical Officer of Health for the Borough, and Medical Director and Attendant of the Infectious Diseases Hospitals of the Corporations. Salary first year £400, increasing by annual increments of £20 to a maximum of £500. Applications to the Town Clerk, Town Hall, Oldham.

FROME UNION.—Medical Officer and Public Vaccinator for the Nunney District. Salary £90. Midwifery 10*s.* per case. Certifying lunatics 10*s.* per case. Vaccination 1*s.* 6*d.* to 3*s.* per case. Apply to the Clerk, Public Offices, Frome.

GENERAL INFIRMARY, Leeds.—Resident Casualty Officer. Salary £100 a year, with board, lodging, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians.

JERSEY PUBLIC LUNATIC ASYLUM.—Medical Superintendent for three years. Salary £300 per annum, with house and garden. Applications to the President of the Committee for the Public Lunatic Asylum, Greffe Office, Jersey.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—House Surgeon, Salary £85 per annum, with board and lodging.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant to House Surgeon for six months. Board, lodging, and washing provided.

NORTH RIDING INFIRMARY, Middlesborough-on-Tees.—House Surgeon. Salary to commence at £100 a year, with lodging, board, and washing, and £5 a year in lieu of beer.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill-Stoke-upon-Trent.—House Physician. Salary £100 per annum, increasing £10 per annum, conditionally, with furnished apartments, board, and washing.

NORTHUMBERLAND COUNTY ASYLUM, Morpeth.—Clinical Assistant. Board and residence provided.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road, N.W.—Assistant Physician.

PARISH OF NEWABBEY, DUMFRIES.—Medical Officer and Public Vaccinator. Salary £50 per annum, to provide medicine and surgical appliances to pauper patients gratis. Applications to the Chairman, Captain Stewart, of Shambellie.

ROYAL HALIFAX INFIRMARY.—Assistant House Surgeon, unmarried. Salary, £50 per annum, with residence, board, and washing.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon. Salary at the rate of £60 per annum, with board, lodging, and washing. The appointment will be until Oct. 1st, 1898.

SALFORD ROYAL HOSPITAL.—Honorary Surgeon.

SHAFTESBURY HOUSE PRIVATE ASYLUM, Formby, near Liverpool.—Junior Medical Officer, unmarried. Honorarium at the rate of £50 per annum, with board, lodging, and washing.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—House Surgeon during the month of January. Salary, £100 per annum, with board and residence.

STOCKTON UNION.—Medical Officer and Public Vaccinator for the Medical District of Stockton, and Medical Officer for the Stockton Workhouse. Salary £170 per annum as Medical Officer for the Stockton District, and £130 per annum as Medical Officer for the Workhouse, together with the usual fees for vaccination. The appointment will be subject to statutory deductions. Apply to the Clerk to the Guardians, Union Offices, Stockton-on-Tees.

SUNDERLAND AND NORTH DURHAM EYE INFIRMARY, Sunderland.—House Surgeon. Salary, £100 per annum, out-door.

SUSSEX COUNTY HOSPITAL, BRIGHTON.—House Physician; unmarried. Salary commencing at £50 per annum, with board and residence in the hospital, and washing.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—Junior House Surgeon, unmarried. Salary, £60 a year, with board and residence.

Births, Marriages, and Deaths.

BIRTHS.

FRY.—On Dec. 21st, the wife of Walter E. Fry, M.R.C.S., L.R.C.P. Lond., of Wateringbury, Kent, of a daughter.

MCCOY.—On Dec. 11th, at North-side, Clapham-common, S.W., the wife of M. J. McCoy, L.R.C.P.I., of a daughter.

MARRIAGES.

BURRELL—WALKER-ARNOTT.—On Dec. 14th, at St. Thomas's Church, Edinburgh, Lionel Cottingham Burrell, M.A., M.B., B.C. Cantab., of Arlarie, Kew, to Esther, only surviving daughter of the late David Walker-Arnott, of Ariary, Kinross-shire.

DICKSON—MARSHALL.—On Dec. 18th, at St. Stephen's Church, Gloucester-road, John William Dickson, M.B., of 3, Hertford-street, Mayfair, to Lucy Margaret, daughter of James Archibald Marshall, of 29, Queen's-gate-gardens.

HARGREAVES—JESSOP.—On Dec. 18th, at St. Michael's, Christchurch, Walter Herbert Hargreaves, M.R.C.S., L.R.C.P. Eng., of Akaroa, N.Z., to Alice, third daughter of Zebedee Jessop, Cavendish-crescent, Nottingham.

MCCAUSLAND—BROWN-SÉQUARD.—On Dec. 16th, at Holy Trinity Church, Killiney, Co. Dublin, Richard Bolton McCausland, M.D., F.R.C.S.I., second son of Sir Richard Bolton McCausland, to Charlotte Maria, only child of the late Dr. Brown-Séquard, of Paris.

ROBSON—GLARDON.—On Dec. 20th, at Bombay, Robert George Robson, M.A., M.B., C.M. Edin., Bawar, Rajputana, to Helene, fourth daughter of M. Auguste Glardon, Tour de Peilz, Switzerland.

YEO—SPYERS.—On Dec. 16th, at St. James's Church, Weybridge, I. Burney Yeo, M.D., F.R.C.P. Lond., of Hertford-street, W., to Winifred Helen (Daisy), only daughter of the late T. C. Spyers, M.D., of Faversham.

DEATHS.

FOX.—On Dec. 15th, at Santiago, Muswell-hill, N., Joseph John Fox, M.R.C.S., late of Stoke Newington, aged 76 years.

LATHAM.—On Dec. 14th, at Oakfield Cottage, Sandbach, suddenly, W. H. Latham, M.R.C.S., aged 49 years.

WILSON.—On Dec. 13th, at Waverley-road, Southsea, Surgeon-Lieutenant-Colonel Joseph Wilson, M.D., Indian Medical Service, retired, aged 49 years.

N.B.*—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 22nd, 1897.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 16	29·80	S.W.	...	64	57	48	53	54	Raining
,, 17	30·10	S.	...	69	56	50	50	51	Cloudy
,, 18	30·30	S.W.	...	56	56	44	44	44	Foggy
,, 19	30·33	E.	...	48	47	41	41	41	Raining
,, 20	30·33	S.E.	...	47	45	41	42	44	Overcast
,, 21	30·50	S.E.	...	44	41	33	38	40	Overcast
,, 22	30·63	S.E.	...	47	41	35	35	36	Foggy

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICE.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1897, which is completed with the issue of to-day, will be given in the next number of THE LANCET.

BOARDS OF GUARDIANS AND THE VACCINATION LAW.

THE increasingly prevalent practice of boards of guardians to evade the responsibilities imposed on them by the Vaccination Acts by referring to the recommendations of the Recent Royal Commission shows the need for fresh legislation which it may be hoped will relieve these authorities altogether from their responsibilities. As typical of the attitude now so often taken may be cited the following resolution lately passed at a meeting of the Stow Guardians at Stowmarket, the resolution being carried by fifteen to six. It runs: "That as the Royal Commission on Vaccination had recommended that parents who conscientiously objected to vaccination should not be compelled to have their children vaccinated this Board declines to prosecute any parent who avows such conscientious objection."

L. G.—"Neale's Digest" is published by Ledger, Smith, and Co., St. Mary Axe. "The Science and Practice of Midwifery," by W. S. Playfair, M.D.Edin., and "A Manual of Midwifery," by A. L. Galabin, M.D. Camb. Our correspondent should consult the last Student's Number of THE LANCET.

Mr. E. W. Robinson.—A medical man has the same right to choose his patients as the patients have to choose their medical man. We think our correspondent will be well advised to let the matter drop, but anyway it is a solicitor's advice not ours that he wants.

A SYRINGE FOR LOCAL ANÆSTHESIA.

IN the *Deutsche Medicinische Wochenschrift* of Dec. 2nd Dr. Wullenweber, of Tandslet in Alsen, describes a syringe which he has devised for the purpose of easily overcoming the resistance encountered when Schleich's solution is injected into dense structures such as the matrix of the nail, the palm of the hand, the sole of the foot, &c. The piston-rod has a screw thread and carries a small loose nut which is provided with two small lateral projections at opposite points of its circumference. The metal mount at the upper end of the body of the syringe has two projecting arms with the help of which the instrument can be securely held. This mount has the usual circular central aperture through which the piston-rod moves freely. At opposite points of this aperture there are two small notches corresponding to the projections on the nut, so that in one position of the nut it can be passed through the aperture and then by giving it a quarter turn it can be firmly fixed to the mount. Turning the knob at the top of the piston-rod now brings the screw into action and the solution is expelled with an easily regulated force which is capable of overcoming any resistance. Obviously the syringe can be used according to circumstances either with the screw motion or with the ordinary direct pressure exerted by the thumb or finger.

S.—Books upon house building treat mostly of one section of construction only. A reference to the catalogue of Crosby, Lockwood, and Sons, 7, Stationer's Hall-court, E.C., would furnish the information desired. "The Dwelling House," by Dr. G. Vivian Poore, published by Longmans, Green, and Co., 39, Paternoster-row, contains many useful hints. The reprint of THE LANCET Commission upon the Relative Efficiency and Cost of Plumbers' Work, illustrated with plans, &c., will be found useful with regard to drainage. "Electric Lighting," by J. W. Urquhart, also published by Crosby, Lockwood, and Sons, will be found of practical value. Though published in 1879 "Warming Buildings by Hot Water, Steam, and Hot Air, with Notes on Ventilation," by C. Hood, F.R.S., &c., so far as the principles to be observed are concerned, is a standard work, but many improvements have since been made in radiators, boilers, and stoves. We cannot recommend any individual firms among so many good firms of equal merit.

SOME ALTERNATIVES TO DROWNING.

To the Editors of THE LANCET.

SIRS,—There is always, I fancy you will admit, a freshness in the method wherewith the juvenile intellect applies itself to important questions. It occurs to me that you may be interested in two replies which were sent in to the query, "If summoned to a person just rescued from drowning how would you act? Describe fully artificial respiration." The occasion being an examination for ambulance certificates for the Boys' Brigade. The answers were: 1. "Put him flat on his stomach with his coat below him and squeeze all the water out of him; then apply artificial respiration by putting his arm over his head and back to his stomach." 2. "Lay the drowning man down in the most comfortable place you can get. Put a pad under his shoulders and then turn him over putting the pad on the stomach. Press on his back with the knee till you pump all the water up out of his stomach. Then turn him on his back again taking care to tie the tongue back to keep him from chocking. Begin artificial respiration by pulling the arms above the wet man's head and then drawing them over and then in."

I am, Sirs, yours faithfully,

Dec. 13th, 1897. J. W. W.

A Young Practitioner.—It would be preferable to have the subscriptions collected by a private employé. The agent in question might be instructed not to canvass, but as he would be entering the houses of possible patients of other medical men on other business he might appear to be touting. This is a censorious world and a young practitioner must avoid the appearance of evil.

THE PHONOGRAPHIC RECORD.

IN the *Phonographic Record* for December, whilst Dr. Spooner's Phonographic Notes and Miss Hodgson's account of Shorthand in the Army, deal with shorthand, the articles of Sir W. R. Gowers on the Diagnosis of Hysterical Hemiplegia and Mr. Norman Porritt on Cellulitis of the Neck causing Fatal Spasm of the Glottis supply the medical element. In pointing out the features of hysterical affections Sir William Gowers observes: "The least important are the age and sex of the sufferer and presence of other symptoms of hysteria. Yet these least important symptoms are those which generally receive most weight, are first grasped, and often allowed to mislead the observer's mind in all his subsequent reasoning." The mistake of regarding organic disease as hysterical Sir William Gowers believes to be ten times as common as that of mistaking hysterical disease for organic.

A SANITARY SEAT COVER.

WE need not dilate upon the risks of infection from the use of public water-closets and a little invention by Mr. Joseph Wood, of 52, Preston street, Barrow-in-Furness, seems to be worthy of notice. It is simply a sheet of paper with a hole cut in it corresponding to the opening in the w.c. seat. From the inside edge of the opening in the paper perforations radiate so that pressure causes the paper to shape itself to the seat.

Salt.—The treatment of the service is on the whole good and the pay fair.

LABOUR COMPLETED WITHOUT RUPTURE OF MEMBRANES.

To the Editors of THE LANCET.

SIRS,—I believe these cases are sufficiently rare to warrant their being recorded. On Oct. 30th I was called at about 3.30 P.M. to a woman said to be in labour for the second time. On examination I found that dilatation of the os had scarcely commenced. I left, saying I would call in two or three hours. On my return I found the os about the size of a half-crown with the membranes unruptured. Half an hour later as the patient was walking round the room she suddenly complained that she felt something coming away. She had just time to get to the bed when membranes, fœtus, and placenta were suddenly expelled together. The membranes were unruptured. I quickly ruptured them but my efforts to resuscitate the child were without avail. It was a seven months' fœtus. The after-history of the mother was uneventful.

I am, Sirs, yours faithfully,

East-road, Hoxton, N., Dec. 20th, 1897. THOMAS C. PENFOLD.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.).

WEDNESDAY (29th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.).

THURSDAY (30th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2 30 P.M.).

FRIDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (1st).—Royal Free (9 A.M. and 2 P.M.), Middlesex, (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received: *Eastern Morning News, Manchester Guardian, Hull Daily News, Glasgow Herald, Tamworth Herald, Bradford Observer, Wigan Examiner, Devon Weekly Times, Torquay Times, Figaro, Times of India, Pioneer Mail, Yarmouth Independent, Obax Times, Bridgwater Independent, Architect, Cambs. Times, Colchester Gazette, Warrington Examiner, Scotsman, Builder, Sheffield Telegraph, Newcastle Leader, North British Mail, Yorkshire Post, Midland Free Press, Halifax Guardian, Chester Chronicle, Herald of Wales, Liverpool Daily Post, Hereford Times, Somerset County Herald, Leicester Post, Birmingham Post, Leeds Mercury, Portsmouth Times, Kettering Guardian, Cheltenham Free Press, Worcester Chronicle, Cromer Post, Bristol Mercury, Norfolk Chronicle, Lincoln Mercury, Carnarvon Herald, Sanitary Record, Hertfordshire Mercury, City Press, St. Mary's Hospital Gazette, Friendly Societies' Recorder, Reading Mercury, Mining Journal, Public Health, Engineer, Local Government Chronicle, Weekly Free Press, and Aberdeen Herald, Local Government Journal, Surrey Advertiser, Western Morning News, Berrows' Worcester Journal, Kerry Weekly Reporter, Bath Daily Chronicle, Sussex Daily News, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Mr. J. W. Arrowsmith, Bristol; Messrs. Armour and Co., Lond.; Mons. J. Astier, Paris; Association for Pure Vaccine Lymph, Lond., Secretary of; Messrs. Allen and Hanburys, Lond.; Apollinaris Co., Lond.; Dr. J. Altschul, Lond.; Dr. Collingwood Andrews, Lond.

B.—Senor Miguel Bethencourt, Curaçoa; British Institute of Preventive Medicine, Lond., Hon. Secretary of; Messrs. Brady and Martin, Newcastle-on-Tyne; Messrs. Baiss Bros. and Co., Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. Burgoyne, Burbidges, and Co., Lond.; Messrs. P. B. Burgoyne and Co., Lond.; Messrs. Blondeau et Cie, Lond.; Messrs. E. G. Berryman and Sons, Lond.; B. M., Lond.; Dr. J. Barr, Liverpool; Messrs. W. H. Bailey and Son, Lond.; Mr. C. Birchall, Liverpool; Dr. Bowlan, Lond.; Dr. W. T. Brooks, Oxford.

C.—Mr. R. Cuffe, Woodhall Spa; Mr. F. W. Clarke, Manchester; Mrs. A. M. Campbell, Lond.; Mr. C. H. Cooper, Lond.; Messrs. T. Christy and Co., Lond.; Messrs. Cassell and Co., Lond.; Messrs. Clifford and Co., Lond.; Chelsea Hospital for Women, Secretary of; Surgeon-Lieutenant-Colonel Thomas Cayze, Liverpool; Mr. H. L. Carre-Smith, Chiswick; Dr. E. Clarke, Lond.; Mr. R. A. Caldwell, Southampton; H. M. Crookshank Pacha, Cairo; Messrs. Clarke, Son, and Platt, Lond.; Dr. Thomas Carr, Braintree.

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I.—Mr. Ingram, Yeovil.

J.—Mr. T. H. Johnson, Doncaster; Mr. H. Juler, Lond.; *Journal of Balneology and Climatology*, Lond.; Messrs. W. and A. K. Johnston, Edinburgh; Mr. Clayton Jones, Ottery St. Mary.

K.—Mr. P. A. Karkeek, Torquay.

L.—Dr. J. H. Lamb, Crediton; Dr. A. P. Luff; Leeds General Infirmary, Manager of; Lady Superintendent, East Croydon; Mr. J. B. P. Long, Lond., Mr. H. K. Lewis, Lond.

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O.—Dr. J. Oliver, Lond.

P.—Mr. Y. J. Pentland, Edinburgh; Mr. Louis Porri, Grimsby; Messrs. Potter and Sacker, Lond.

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T.—Dr. C. B. Taylor, Nottingham; Dr. T. Telford-Smith, Lancaster; Dr. H. G. Turney, Lond.

V.—Vectis, Lond.

W.—Mr. W. P. Walker, Birmingham; Western General Dispensary, Lond., Secretary of; Messrs. Widenmann, Broicher, and Co., Lond.; *Wiltshire County Mirror* Newspaper Co., Salisbury; Dr. R. M. Wyckoff, Brooklyn, U.S.A.; Dr. W. D. Warde, Knowsley; Mr. S. L. Woolmer, Concordia, Argentine Republic; Dr. J. R. Williams, Penmaenmawr.

X.—X, Clapton.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. R. R. Anderson, Fern Hill; Mr. W. Anderson, Lond.; A. B. C., Lond.; Assistant, North Seaton.

B.—Dr. M. D. Berry, Lond.; Messrs. J. B. Brooks and Co., Birmingham; Messrs. Brown, Gould, and Co., Lond.; British Medical Temperance Assn., Lond., Treasurer of.

C.—Mr. A. H. Cheatle, Lond.; Messrs. H. and W. Cox, Leicester; City of Coventry, Treasurer of, Corporation of Calcutta, Secretary of; Cheshire County Asylum, Macclesfield, Clerk of; C. M., Lond.; Cash, Lond.

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K.—Dr. N. Kerr, Lond.

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